KENWOOD

HI/FI STEREO COMPONENTS

# SERVICE MANUAL

## KX-500


**STEREO CASSETTE DECK**

KX-500

# CONTENTS

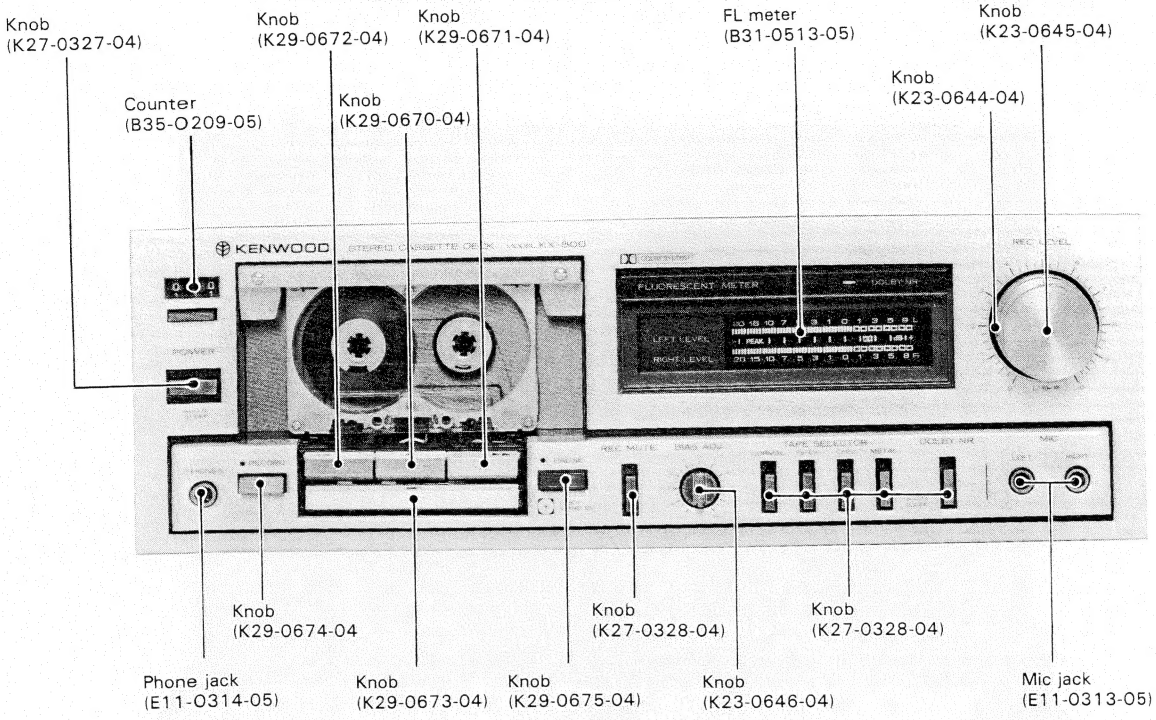


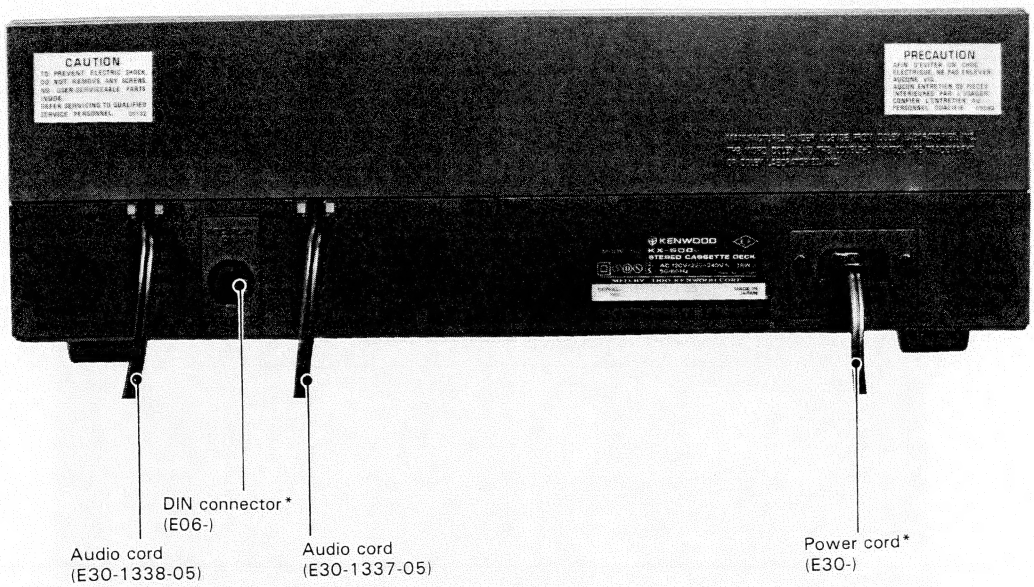
**Note:**
Component and circuitry are subject to modification to insure best operation under differing local conditions. This manual is based on, the U.S.(K) standard, and provides information on regional circuit modification through use of alternate schematic diagrams, and information on regional component variations through use of parts list.

| Region | Code |
|---|---|
| U.S.A. | K |
| Canada | P |
| PX | U |
| Australia | X |
| Europe | W |
| England | T |
| South Africa | S |
| Other Areas | M |
| Audio Club | H |

Dolby is a trademark of Dolby Laboratories Inc.

# EXTERNAL VIEW




*Refer to Parts list.

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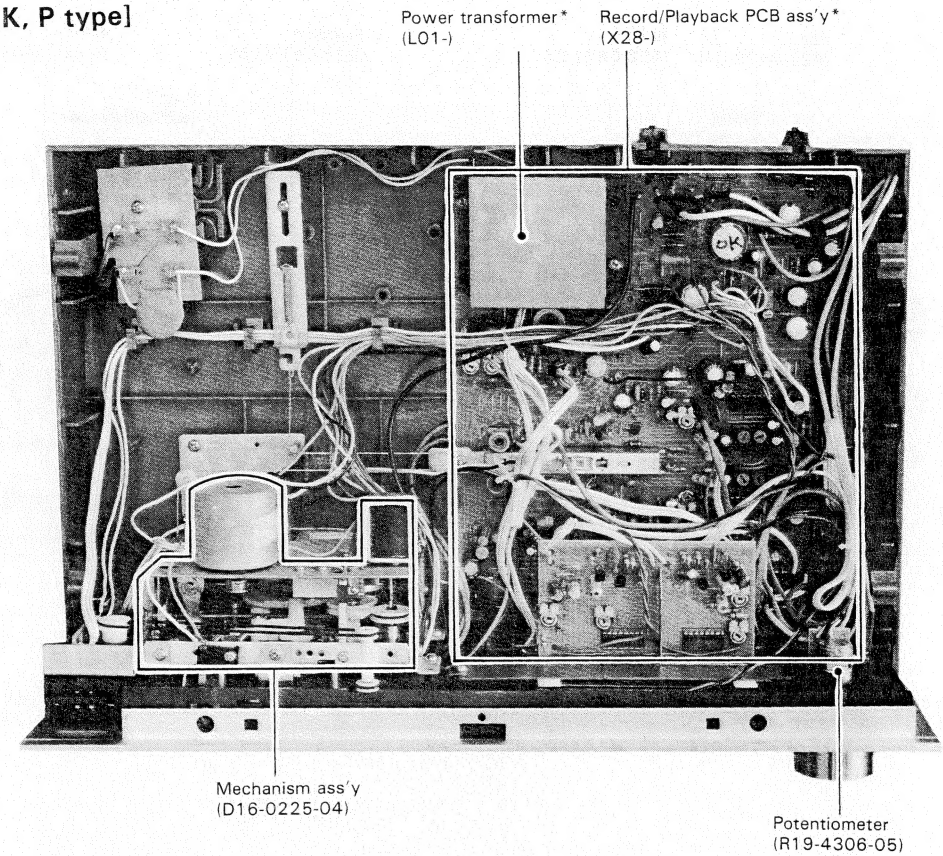
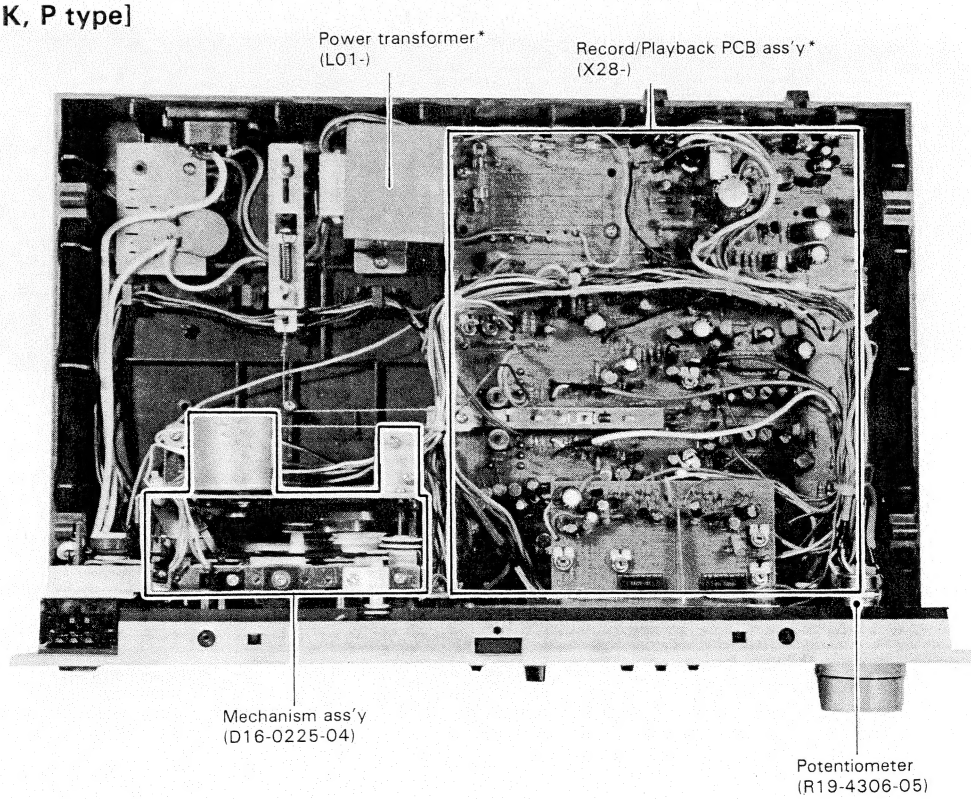
# INTERNAL VIEW

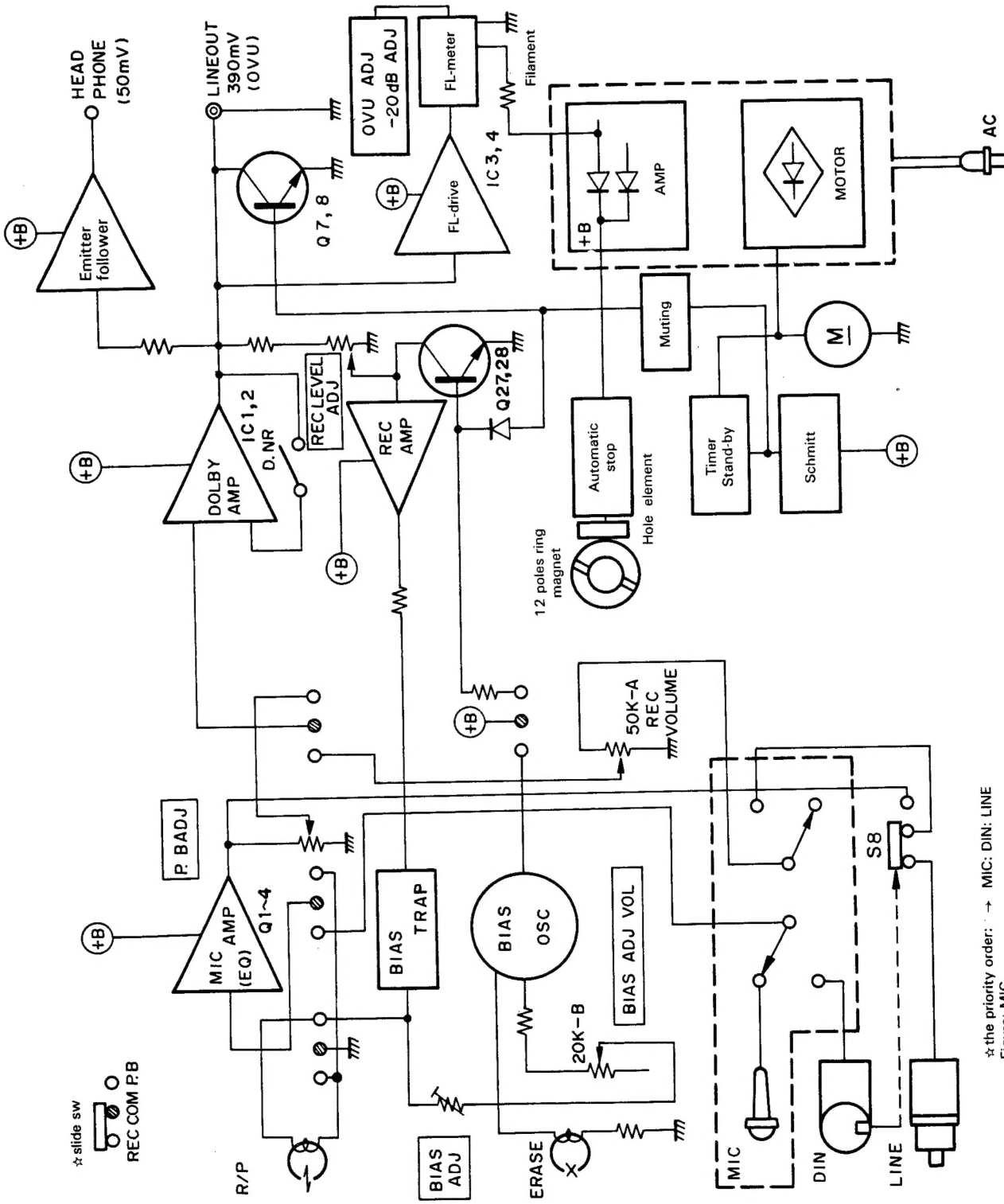
[K, P type]




[Except K, P type]

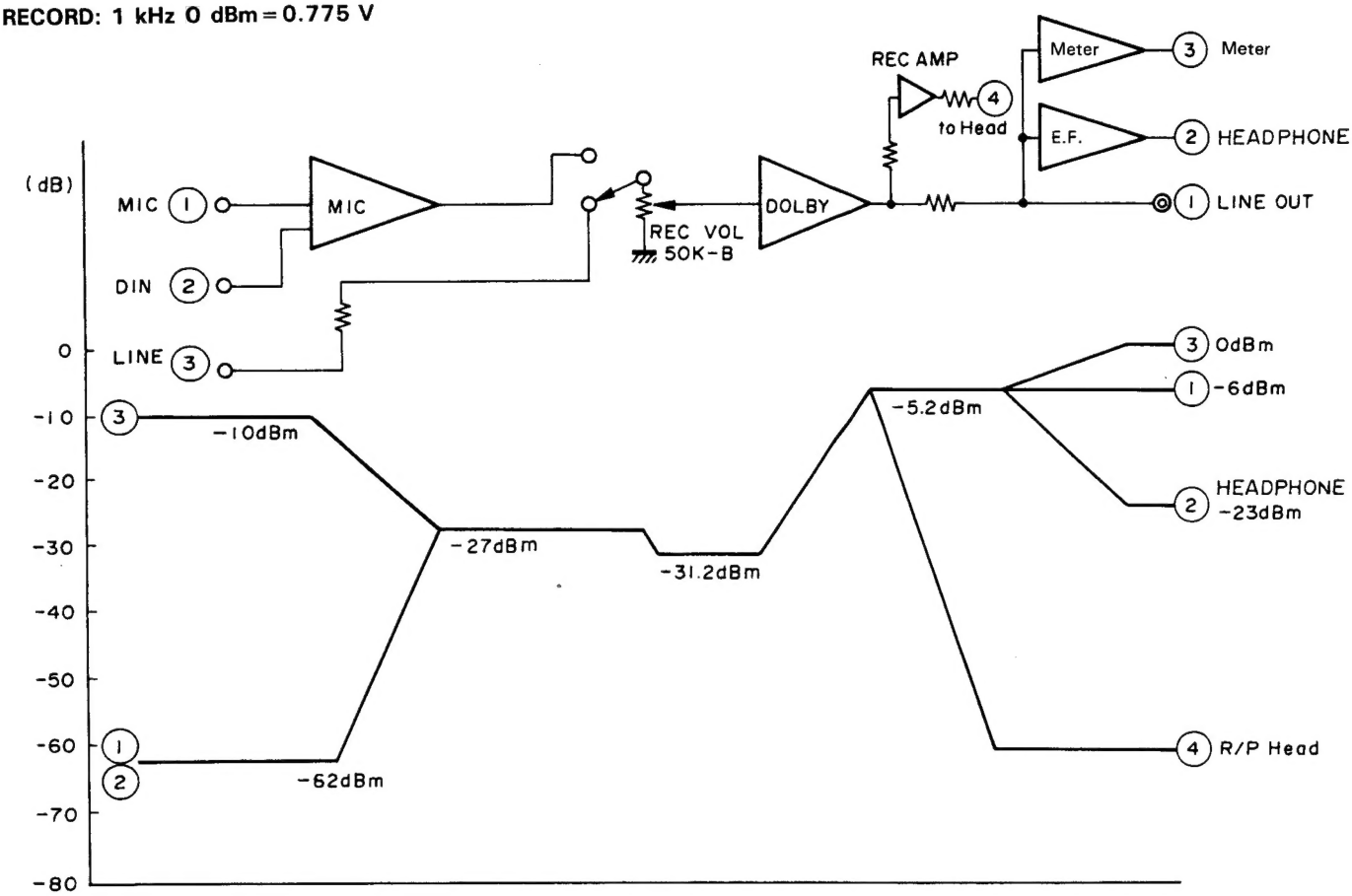


# BLOCK DIAGRAM

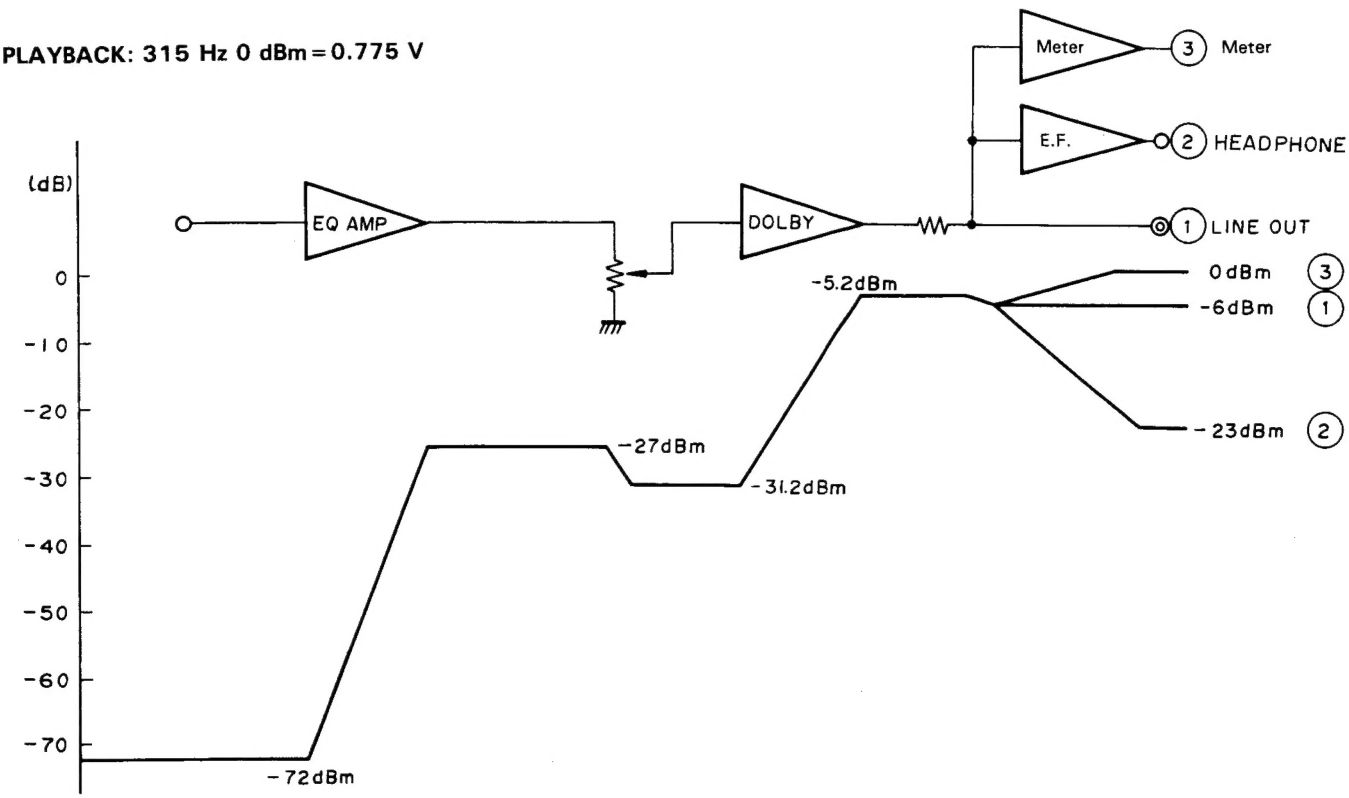


# LEVEL DIAGRAM

**RECORD: 1 kHz 0 dBm = 0.775 V**




**PLAYBACK: 315 Hz 0 dBm = 0.775 V**



# DISASSEMBLY FOR REPAIR

## CORD STRINGING OF REC SWITCH

Arrange the wire as shown in Fig. 1.
Route the wire as shown in Fig. 2 and hook the end of the wire to Rec lever B. In the stop mode, fix Rec lever B with no slack wire. Check the function in the Rec mode.

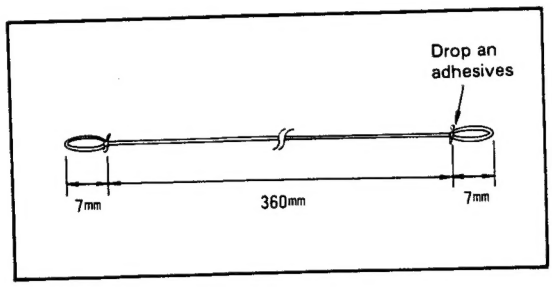



Fig. 1

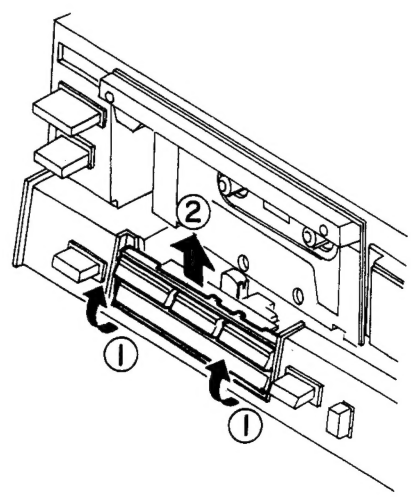



**Note:**
As the groove in the pulley is narrow, confirm that the wire is securely engaged with the groove.

Fig. 2

## REMOVAL OF THE OPERATION KNOB

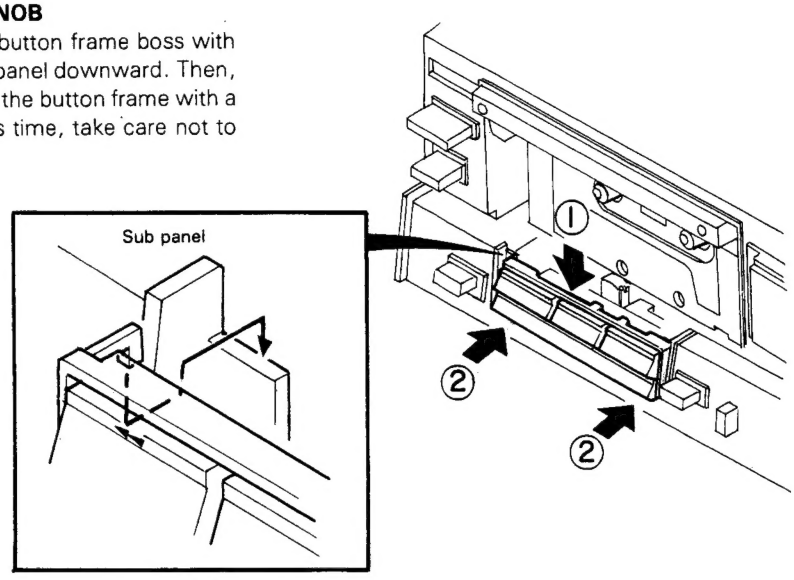
When removing the operation knobs ass'y from the unit, hook your fingers at the bottom of the knobs and lift it upwards.



# DISASSEMBLY FOR REPAIR

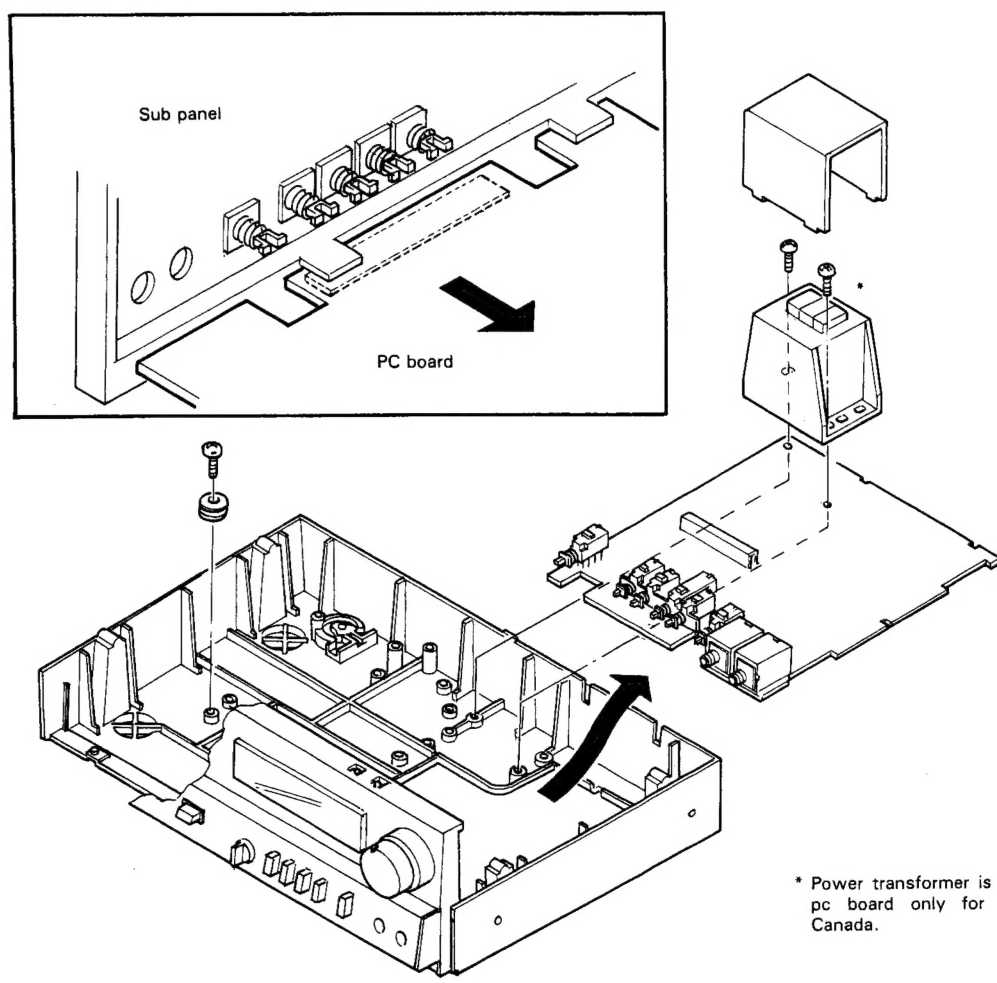
**MOUNTING OF THE OPERATION KNOB**

Insert the button frame engaging the button frame boss with the sub panel and depress the button panel downward. Then, press the right and left lower corner of the button frame with a screwdriver, etc. until it clicks. At this time, take care not to scratch the button frame.




**R/P PCB ASS'Y**

When removing the R/P PC board from the unit, remove the screw from PC board. Remove the PC board backwards.




* Power transformer is mounted on pc board only for U.S.A. and Canada.

# ADJUSTMENT

**1. Adjustment of Take-Up Torque (Forward Torque)**

**Note:**

Take-up torque should be measured after the flywheel components, flat belt, etc. are cleaned.

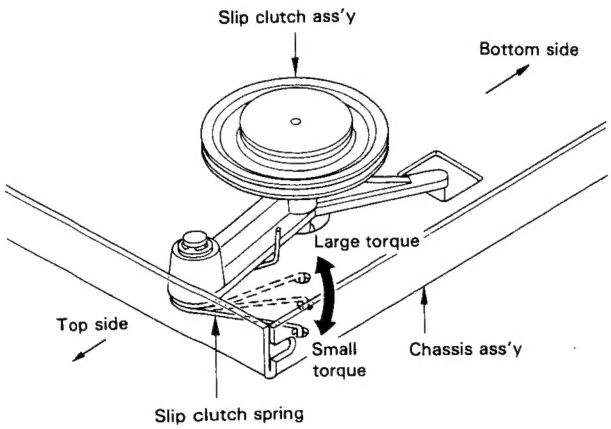
If this treatment is omitted, basic characteristics such as constant running, wow and flutter, etc. may be influenced adversely.

If the take-up torque is out of the standard 40~75 cm, repair as follows:

(1) Change the inserted hole of the slip clutch spring.

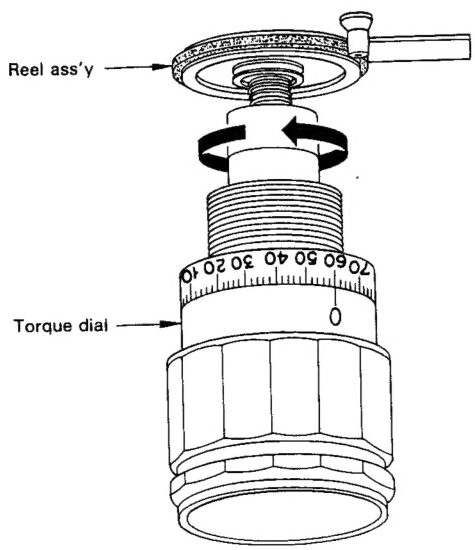
(2) Replace the slip clutch spring.

(3) Replace the slip clutch ass'y.




**2. Measurement of Torque**

Use a torque dial or a cassette type torque gauge.




**3. Confirmation of Wow and Flutter**

**Note:**

If the wow and flutter is out of the standard, repair as follows:

(1) Clean the flat belt and the pinch roller with alcohol.

(2) Adjust the thrust screw, if necessary.

(3) Replace the flywheel ass'y, if necessary.

(4) Replace the flat belt and the pinch roller, if necessary.

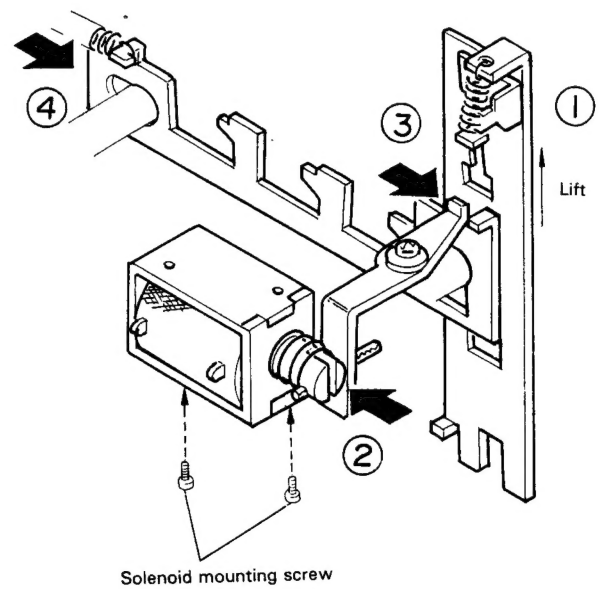
**4. Checking the Auto-Stop Mechanism**

If the auto-stop mechanism does not function, first check the functioning of the solenoid.

(1) Manually raise the Rec lever 1 .

(2) Manually insert the solenoid core 2 .

At this time, the playback mode should be released. If the solenoid's stroke is too short, loosen the solenoid mounting screws and re-position the solenoid.



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# ADJUSTMENT

## 1. Test Instrument

- Solid state volt meter:
  SSVM
- Audio frequency generator:
  AG
- Oscilloscope
- Frequency counter
- Weighting filter
  (ASA A characteristic with NAB curve)
- Band pass filter
  (Center frequency: 100 Hz, 1 kHz,
  Attenuation: 18 dB/oct. or more)
- Cassette type torque gauge
- Spring balance

## 2. Test Tape

a) Test tape for recording system adjustment
  NORMAL:
    MAXELL UD-XLI (T93-0013-15)
  CHROME (for measurement):
    TDK AC-511. (T93-0010-05) or SAC-60

b) Test tape for playback measurement
  TEAC MTT-111 (Tape speed, azimuth)
  TEAC MTT-216R
    (MTT-116R) (Frequency characteristic)
  TEAC MTT-216
    (MTT-116U) (Frequency characteristic)

c) Cleaning Tape (T93-0014-05)

## 3. Meaning of Technical Words

a) **Normal recording level:** A level to obtain residual magnetic flux of 160 pWb/mm on the standard recording tape, which is 4 dB below the level 315 Hz, 0 dB (250 pWb/mm) of the test tape (MTT-216R).

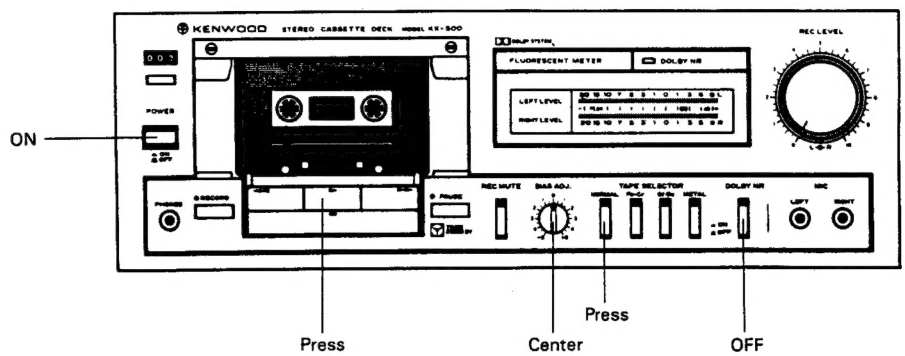
b) **Normal input level:** The standard input level necessary for obtaining the normal recording level. The levels at respective input jacks are as specified below. However 80 kΩ resistor should be inserted in the input of the DIN connector in series.

MIC INPUT ..... −62 dBs (0 VU)
LINE INPUT ..... −10 dBs (0 VU)

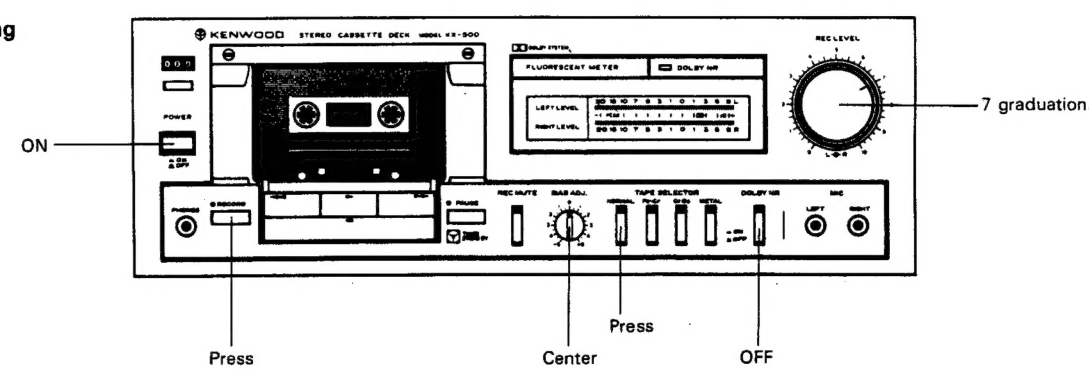
c) **Normal recording condition:** The state obtained by applying the 1 kHz signal to the LINE input jack at the normal input level (−10 dBs) and by adjusting the REC LEVEL control so that recording can be carried out at the normal recording level. (Volume position is at about 7 graduation).

d) **Normal output level:** The standard signal level obtained at the LINE output jack when the level reference signal is reproduced from the test tape 315 Hz.
MTT-216R 315 Hz (250 pWb/mm)
  Output level: −2 dBs
MTT-216U 315 Hz (160 pWb/mm)
  Output level: −6 dBs

e) **Standard playback**




f) **Standard recording**



# ADJUSTMENT

0 dBs = 0.775V
= 0 dBm

DOLBY NR SW : OFF, NORMAL position

| NO. | ALIGN | INPUT SIGNAL | CHECK POINTS | DECK SETTING | ADJUSTING POINTS | ADJUSTING METHOD | REMARKS |
|---|---|---|---|---|---|---|---|
| 1. | **DEMAGNETIZING** | — | R/P head, Capstan | Power: off | — | Demagnetizing | Head demagnetizer |
| 2. | **BIAS TRAP & BIAS OSCILLATING FREQUENCY** | — | TP1, 2 | Recording REC VOL: Min | L1. 2 | Minimum output at TP1, 2 (105 kHz) | Output 300mV. Check the oscillating frequency. Standard: 105±2.5 kHz. Replace Osc. coil L7, if it is deviating from the standard. |
| 3. | **BIAS LEVEL (preparation)** | — | TP3, 4 | Recording | VR9, 10 | Adjust the AC voltage to 5 mV. | Required only when replacing the R/P head. |
| 4. | **REC LEVEL (preparation)** | 1 kHz −20 dBs | TP3, 4 | Recording REC VOL:Max Short-circuit TP5 with terminal TP6. | VR3, 4 | Adjust the AC voltage to 0.4 mV. | Required only when replacing the R/P head |
| 5. | **TAPE SPEED** | MTT-111 | LINE OUT | Playback | Trimming potentiometer in the DC motor | Adjust the frequency to 3000 Hz | |
| 6. | **AZIMUTH** | MTT-216 10 kHz −10 dB | LINE OUT | Playback OUTPUT VOL: Max | Azimuth screw (left side) | Output level (L, R): Max | Reference: −16 dBs +2dB −4dB |
| **Note:** After the alignement, fix the screws with paint. Proceed adjustments after demagnetizing and cleaning the REC/PLAY head. | | | | | | | |
| 7. | **PLAYBACK LEVEL** | MTT-216 315 Hz, 0 dB | LINE OUT | Playback OUTPUT VOL: Max | VR1, 2 | Output level: −6dBs | Reference: −6 dBs ±1.5 dB |
| 8a | **FL-METER (0 dB)** | LINE IN 1 kHz, −10 dBs | LINE OUT & FL-meter | Recording. Set the REC VOL position so that the output level is −6 dBs | VR5, 6 | FL-meter 0 dB. | Reference: 0 dB±1 dB |
| 8b | **FL-METER (−20 dB)** | LINE IN 1 kHz −30 dB | LINE OUT & FL-meter | The above setting. | VR7,8. | FL-meter: −20 dB | Reference: −20 dB |
| 9. | **REC LEVEL** | LINE IN 1 kHz, −10 dBs UD-XLI (NORMAL) AC-511 (CHROME) | LINE OUT | The above setting. Recording→ Playback | VR3, 4 | Output level: −6 dBs | |
| 10. | **OVERALL FREQUENCY CHARACTERISTIC** | LINE IN 1 kHz, −30 dBs 10 kHz −30 dBs UD-XL1 (NORMAL) | LINE IN 1 kHz, −30 dBs 10 kHz −30 dBs UD-XL1 (NORMAL) AC-511 (CHROME) | Recording Playback Recording→ Playback | VR9, 10 | Make the outputs of 1 kHz and 10 kHz equally. | |

**Note:** 1. The bias becomes insufficient and high frequency range raise when turning VR9 or VR10 counterclockwise.
2. Since VR9 and VR10 are adjusted in BIAS CURRENT, they should be adjusted slightly in OVERALL FREQUENCY CHARACTERISTIC.
3. Repeat the alignments of (9, 10) a few times.

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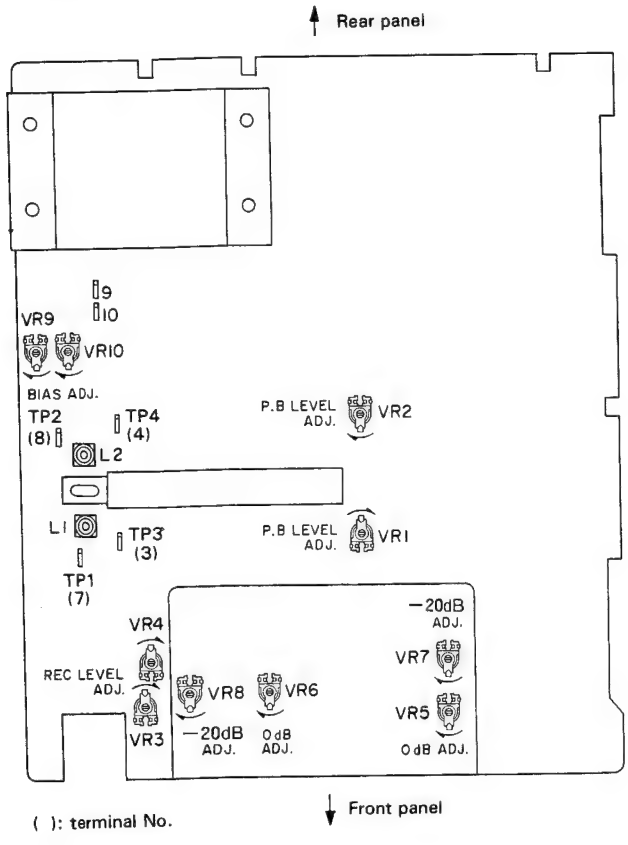
# ADJUSTMENT

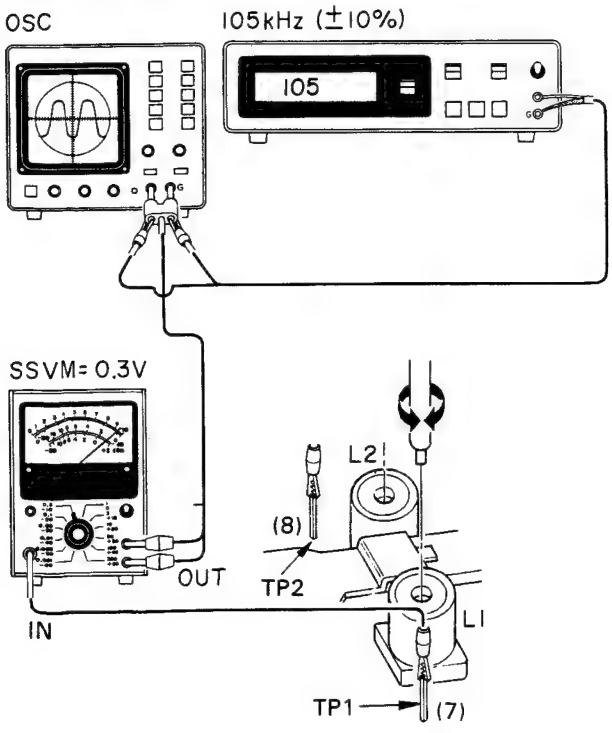
## ① PARTS LOCATION AND TEST POINT



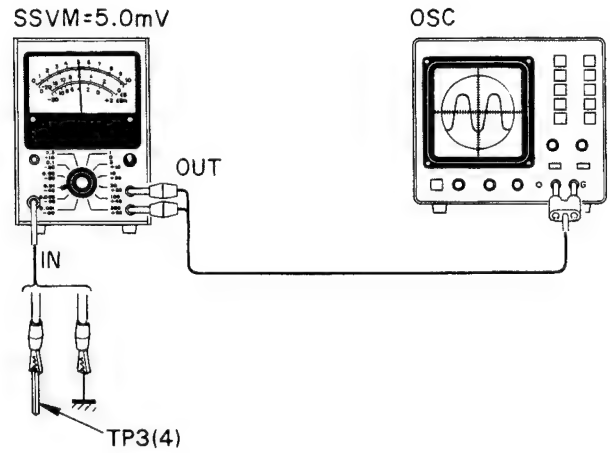

( ): terminal No.

## ② BIAS TRAP (L1, 2)

**Note:** Recording condition, REC LEVEL control: 0

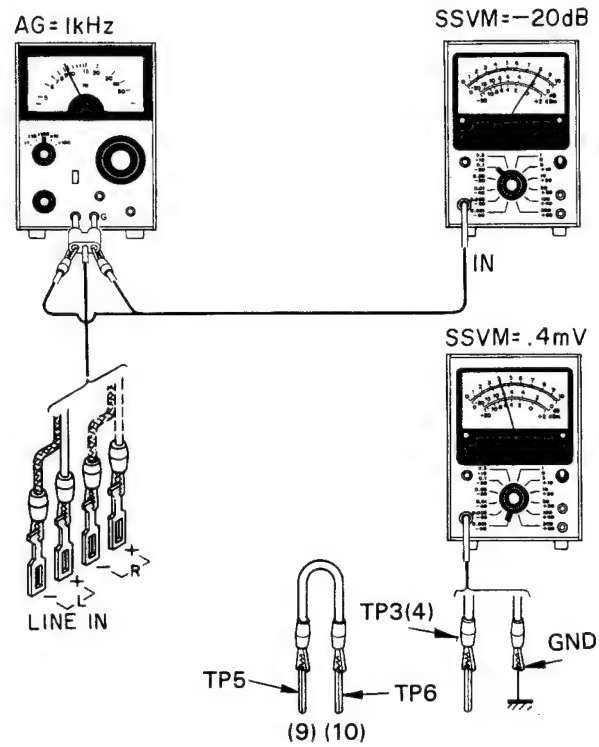



## ③ BIAS CURRENT (VR9, 10)



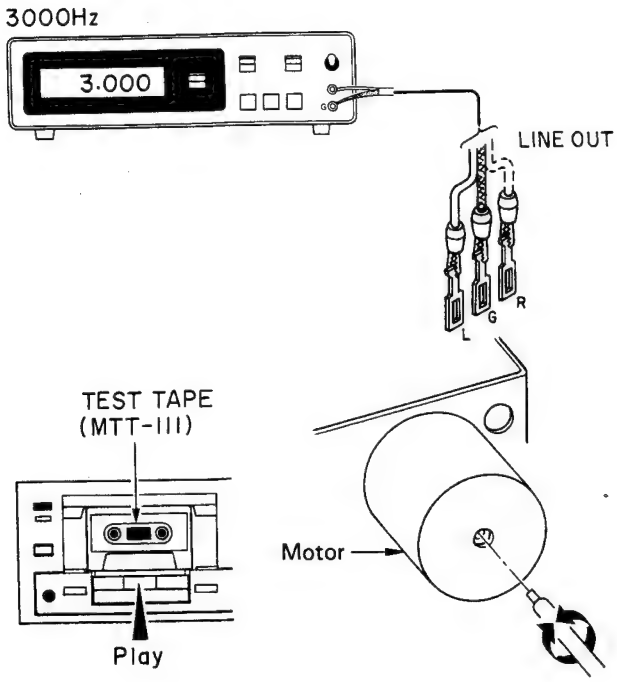

## ④ RECORD CURRENT (VR3, 4)

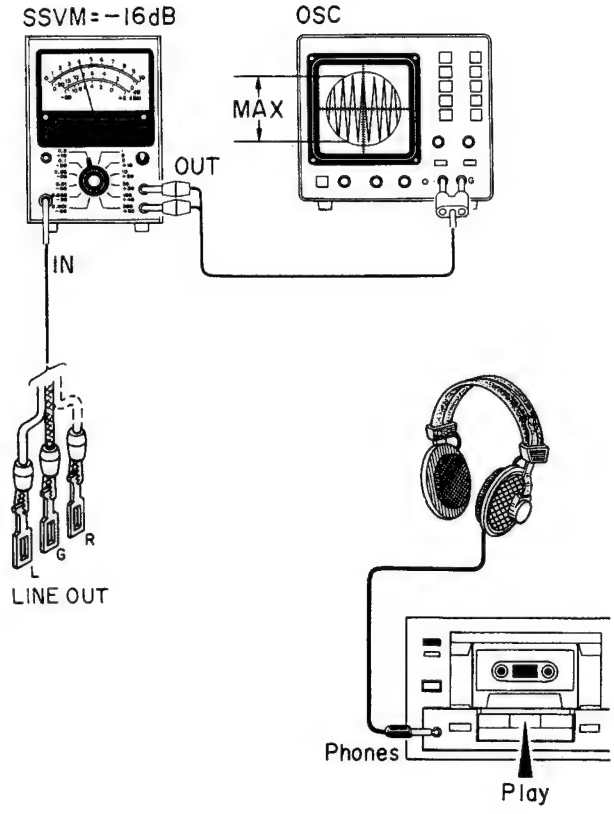
**Note:** Recording condition, REC LEVEL control: 0



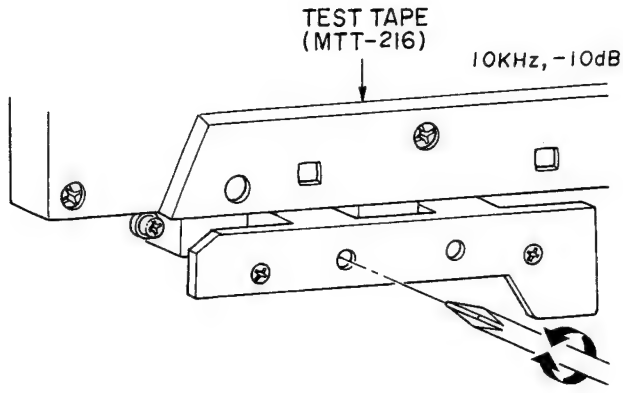
# ADJUSTMENT

### ⑤ TAPE SPEED

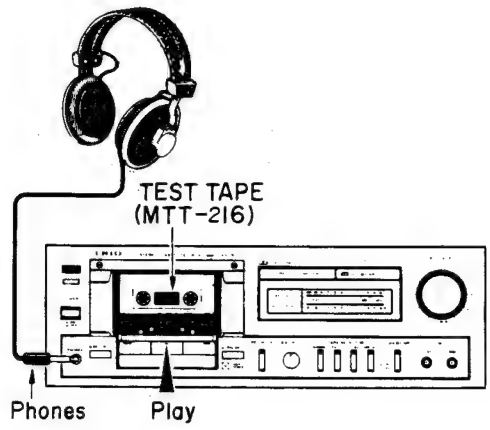


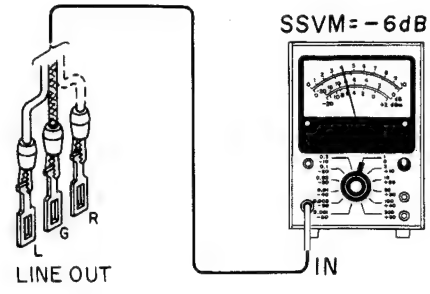




### ⑥ AZIMUTH OF R/P HEAD



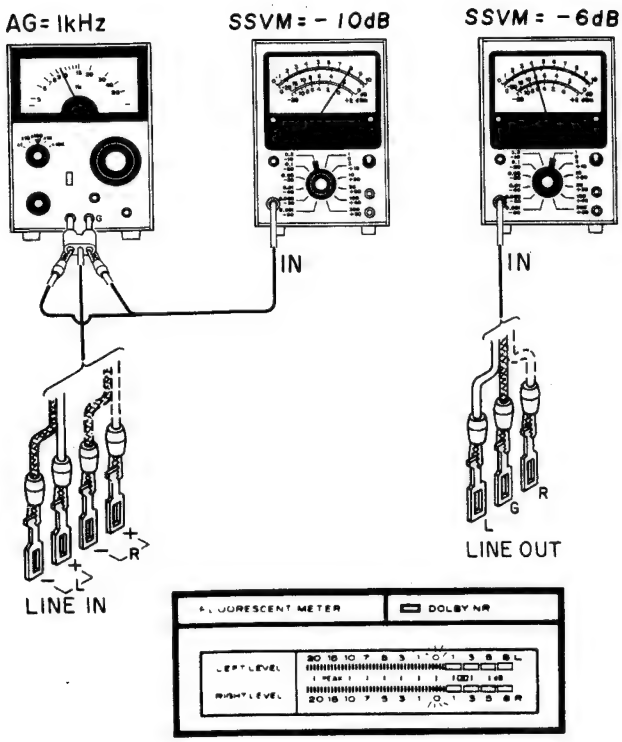

### ⑦ PLAYBACK LEVEL (VR1, 2)



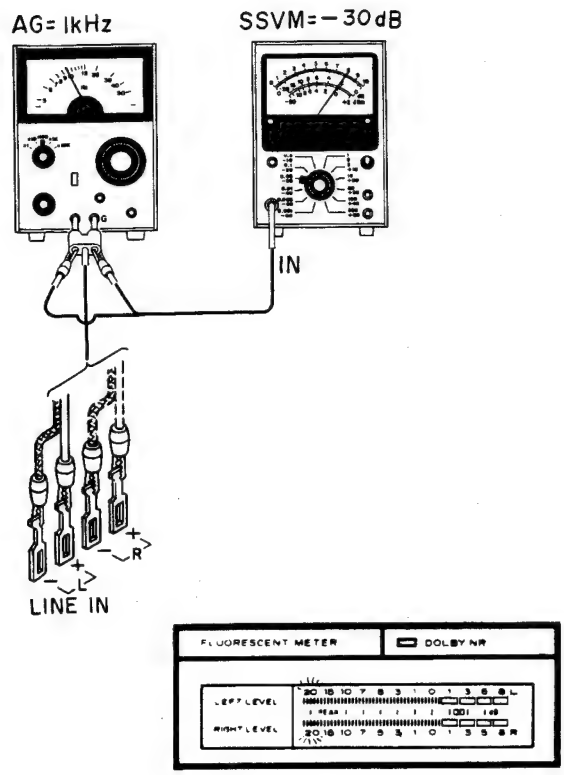



# ADJUSTMENT

### ⑧ FL METER (0dB) VR5, 6

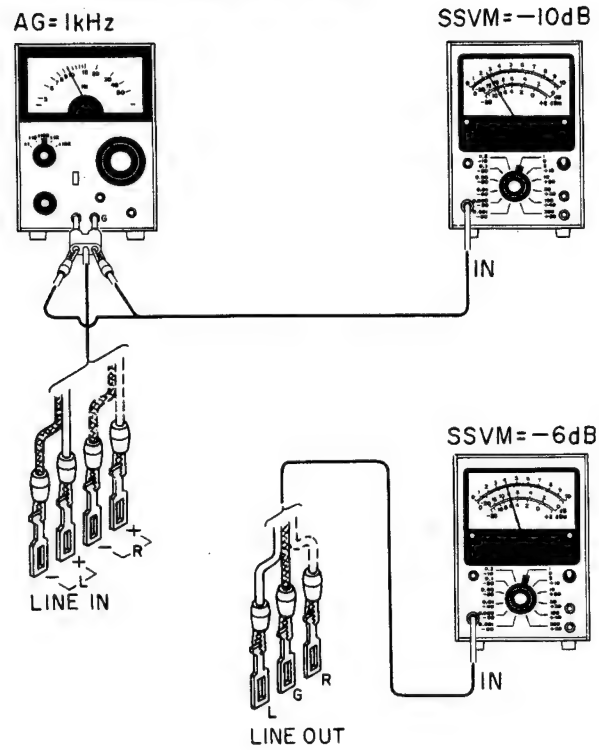



### ⑨ FL METER (−20dB) VR7, 8



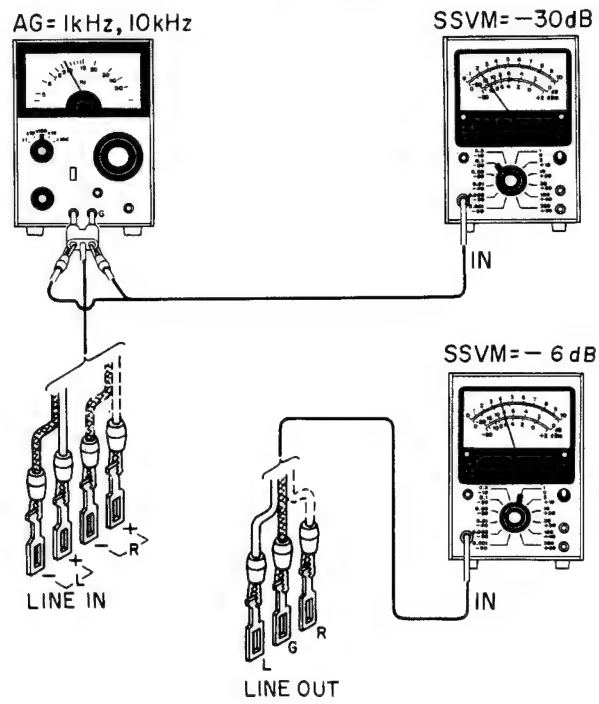

### ⑩ RECORD LEVEL (VR3, 4)

**Note:** Recording→Playback




### ⑪ OVERALL FREQUENCY RESPONSE (VR9, 10)

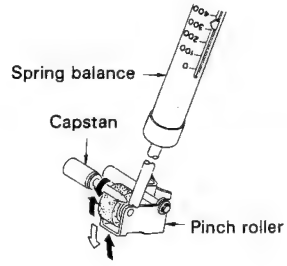
**Note:** Record→Playback

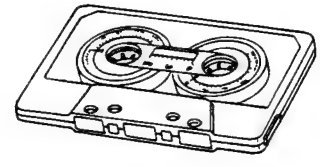


# MEASUREMENT

| NO. | ALIGN | INPUT SIGNAL | CHECK POINTS | SETTING | MEASUREMENT | MEASURED VALUE | REMARKS |
|---|---|---|---|---|---|---|---|
| MECHANISM SECTION | | | | | | | |
| 1. | TAPE SPEED DEVIATION | MTT-111 3 kHz | LINE OUT | Playback | Diviation (%) = $\frac{f\text{-}3\ kHz}{3\ kHz} \times 100$ | ±1.5% | |
| 2. | TAPE SPEED VARIATION | MTT-111 3 kHz | LINE OUT | Playback | Measure the difference between the maximum and minimum tape speed deviation. | 1.3% | |
| 3. | WOW AND FLUTTER | MTT-111 3 kHz | LINE OUT | Playback | Measure at the beginning of, in the middle of, and at the end of tape running. | 0.05%WRMS | |
| 4. | TIME FOR FAST FOR-WARD AND REWINDING | C-60 | — | FF/REW | Measure the winding time necessary for FF and REW operation respectively. | 90 sec. or less | |
| 5. | TAPE COUNTER INDICATION | C-120 | — | FF/REW PLAY/REC | Read out the counter indication from the beginning to the end of the tape, in FF, REW, PLAY and REC setting. (Prior to starting the tape, press the reset button of the counter to clear the figure [000].) | 900 ±50 count | |
| 6. | TIME FOR AUTO-STOP OPERATION | — | — | FF/REW PLAY/REC | Measure the time from the moment the tape stops running until the auto-stopper functions | 3 sec. $\begin{cases} +2\ sec. \\ -2\ sec. \end{cases}$ | |
| 7. | TAKE-UP TORQUE | Cassette type torque gauge, torque dial | — | PLAY | — | 40～75 g.cm | |
| 8. | FF TORQUE | Cassette type torque gauge, torque dial | — | FF | — | 80～160 g.cm | |
| 9. | REW TORQUE | Cassette type torque gauge, torque dial | — | REW | — | 80～160g.cm | |
| 10. | PINCH ROLLER PRESSURE | — | — | PLAY | Press a spring balance to the pinch roller so that the pinch roller will separate from the capstan by 1～2 mm gap in PLAY mode. Then, allow the pinch roller to contact with the capstan quietly so that the pinch roller will start to turn. Then, read the indicating of the spring balance. | 350 ± 50 g | See figure. |
| 11. | TIMER START | C-60 | — | Record (POWER-OFF) ↓ Record | Measure the recovery time when tape is in recording condition from power off under recording. | $3\begin{cases} +2 \\ -1 \end{cases}$ sec. | |

PINCH ROLLER PRESSURE MEASUREMENT



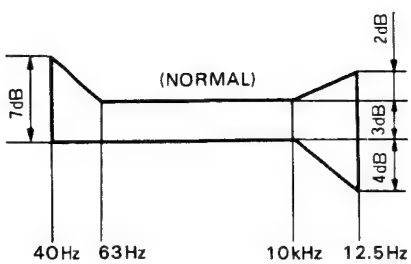
Cassette type torque gauge TW-2111

# MEASUREMENT

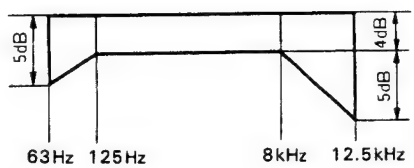
| NO. | ALIGN | INPUT SIGNAL | CHECK POINTS | SETTING | MEASUREMENT | MEASURED VALUE | REMARKS |
|---|---|---|---|---|---|---|---|
| AMP SECTION | | | | | | | |
| 1. | PLAYBACK LEVEL | MTT-216 315 Hz, 0 dB | 1) LINE OUT 2) Headphone jack | Playback | Check the output level | 1)–6dBs±1.5dB 2)–23dBs ±3dB | |
| 2. | PLAYBACK FREQUENCY CHARAC-TERISTICS | MTT-216 –20 dB | LINE OUT | Playback | Plot output levels at respective frequencies. | | See Fig. 1. |
| 3. | PLAYBACK SN RATIO | MTT-216 315 Hz, 0 dB | LINE OUT | Playback | Check the ratio of the output in the playback state vs. that in the pause state. | 46 dB or more (with compen-sation) 42 dB or more (without compensation) | Weighting filter is required |
| 4. | PLAYBACK OUTPUT LEVEL DEVIATION | MTT-216 6.3 kHz –10 dB | LINE OUT | Playback | Check the deviation in the output level. For 60 sections or more. | 3 dB or less | |
| 5. | INPUT SENSITIVITY | 1k Hz | LINE IN LINE OUT | Recording (REC VOL: Max) | Measure the input level to obtain the output level –6 dBs. | MIC: –72dBs ±3 dB LINE: –20 dBs ±3 dB | |
| 6. | OVERALL FREQUENCY CHARAC-TERISTIC (1) WITH DOLBY NR OFF | –20 dB below the normal re-cording level input (–10 dBs) at each frequency, LINE IN | LINE OUT | Normal recording condition→playback (DOLBY OFF, input signal–20 dB below the normal recording level input, equalizer in 3 stages) | Plot output levels at respec-tive frequencies | | Channel bal-ance should be made within 4 dB (See Fig. 2) |
| 7. | OVERALL FREQUENCY CHARACTER-ISTIC (2) WITH DOLBY NR ON | –20 dB below the normal re-cording level input at each frequency, LINE IN | LINE OUT | Normal recording condition→playback (DOLBY ON, input signal –20 dB below the normal recording level input, equalizer in 3 stages) | Plot output levels at respec-tive frequencies. | | See Fig. 3. |
| 8. | ERASING RATE | +6 dB above the normal recording level input at 1 kHz, LINE IN | LINE OUT | Recording→Playback →Erasing | Measure the output level where recording and play-back have been performed and the one where the tape has been erased, using a band-pass filter. Express the resultant level difference in dB. | 60 dB or more | |
| 9. | DISTOR-TION | Normal record-ing level input 1 kHz, LINE IN | LINE OUT | Recording→Playback | Measure the total harmonic distortion factor in the playback output | 2 % or less | |
| 10. | OVERALL SN RATIO | Nromal record-ing level input at 1 kHz, LINE IN and no signal | LINE OUT | Recording→Playback | Check the ratio of the playback level at 1 kHz vs, the noise output level in no-signal tape. | DOLBY NR OFF: 46 dB or more (with compensation) 40 dB or more (without com-pensation) | Weighting filter is re-quired. Channel bal-ance should be made within 5 dB |

# MEASUREMENT

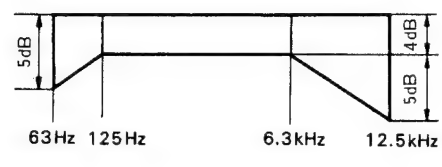
| NO. | ALIGN | INPUT SIGNAL | CHECK POINTS | SETTING | MEASUREMENT | MEASURED VALUE | REMARKS |
|---|---|---|---|---|---|---|---|
| 11. | **CHANNEL SEPARATION** | One channel: Normal recording level input at 100 Hz Another channel: No signal, LINE IN | LINE OUT | Recording→Playback | Measure the playback level in the recorded track and the crosstalk output level in the unrecorded track, using a band-pass filter. Express the resultant level difference in dB. | 40 dB or more | |
| 12. | **CROSS TALK BETWEEN TRACKS** | Normal recording level input at 100 Hz. LINE IN | LINE OUT | Recording→Playback | Measure the playback level in the recorded track and the crosstalk output level in the unrecorded track of the same tape section using a band-pass filter. Express the resultant level difference in dB. | 30 dB or more | |




Standard: Playback Frequency Characteristic (Fig. 1)




Standard: Overall Frequency Characteristic (1) (Fig. 2) DOLBY: OFF




Standard: Overall Frequency Characteristic (2) (Fig. 3) DOLBY: ON

# LUBRICATION

**Cleaning**

Thoroughly clean the following parts with alcohol:

(1) Capstan spindle over which the pinch roller contacts.
(2) Flywheel
(3) Idler
(4) Drive belt (flat type).
(5) Motor pulley over which the drive belt contacts.
(6) Pinch roller
(7) Tape heads.

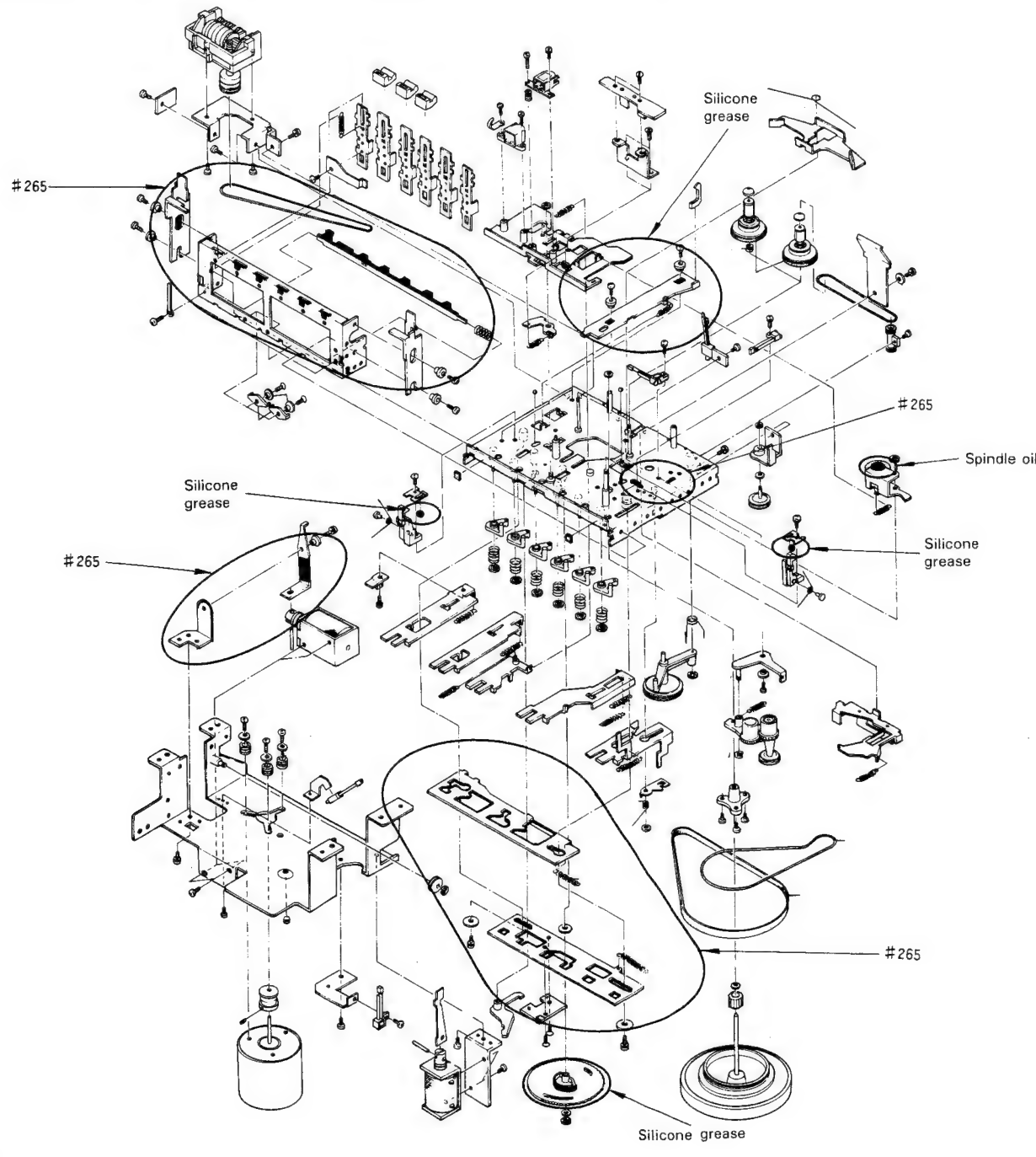
**Lubrication**

Disassemble the tape mechanism to remove deposits of oil and dirt. Lubricate the parts specified with recommended oil.

(1) ROCOL MOLYTONE grease #265 (W01-9997-09)
Contact areas of the mechanism such as reel base shafts, idler shaft and other rotary parts.
(2) Spindle oil (J42-0031-04 or W01-9995-09)
Capstan spindle, motor shaft and other rotary parts using oilless metal.
(3) Silicone grease G40L (W01-9990-00)
Contact areas between metal and plastic.

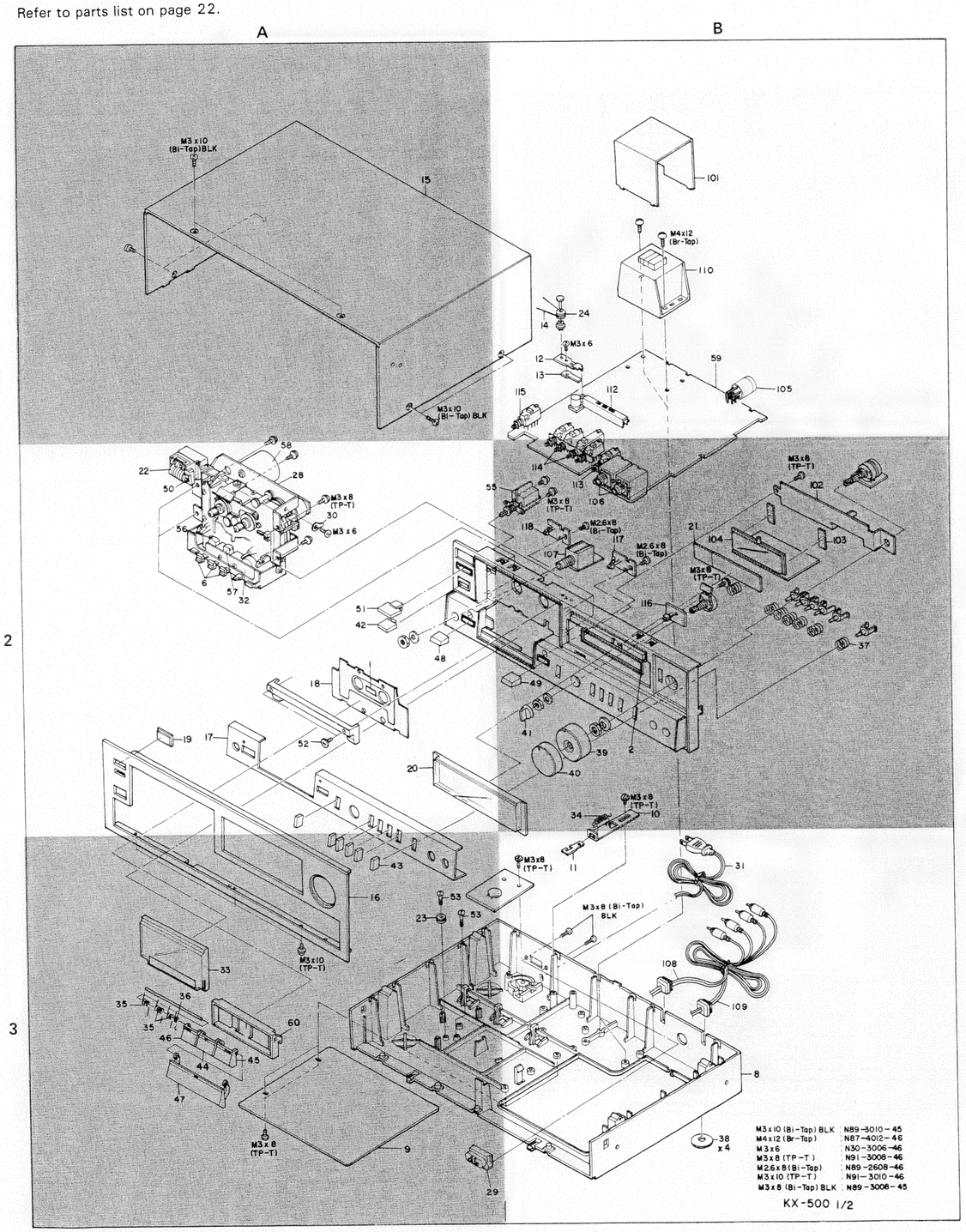
**Note:**

Lubricate with a small amount (1 drop) of oil using a small screwdriver. After lubricating, clean the drive-belts and the idler with alcohol to remove excess oil.



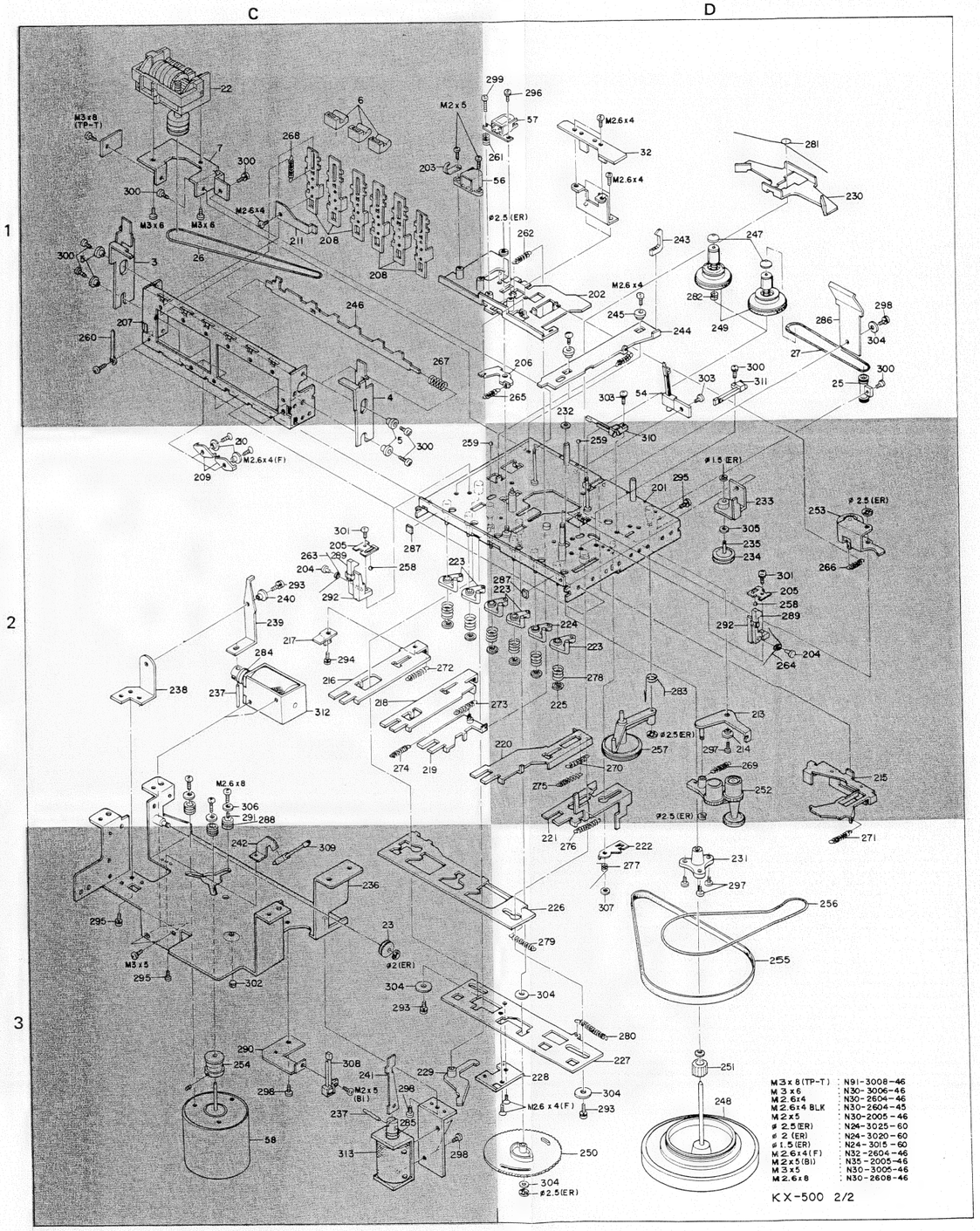
# EXPLODED VIEW

Refer to parts list on page 22.





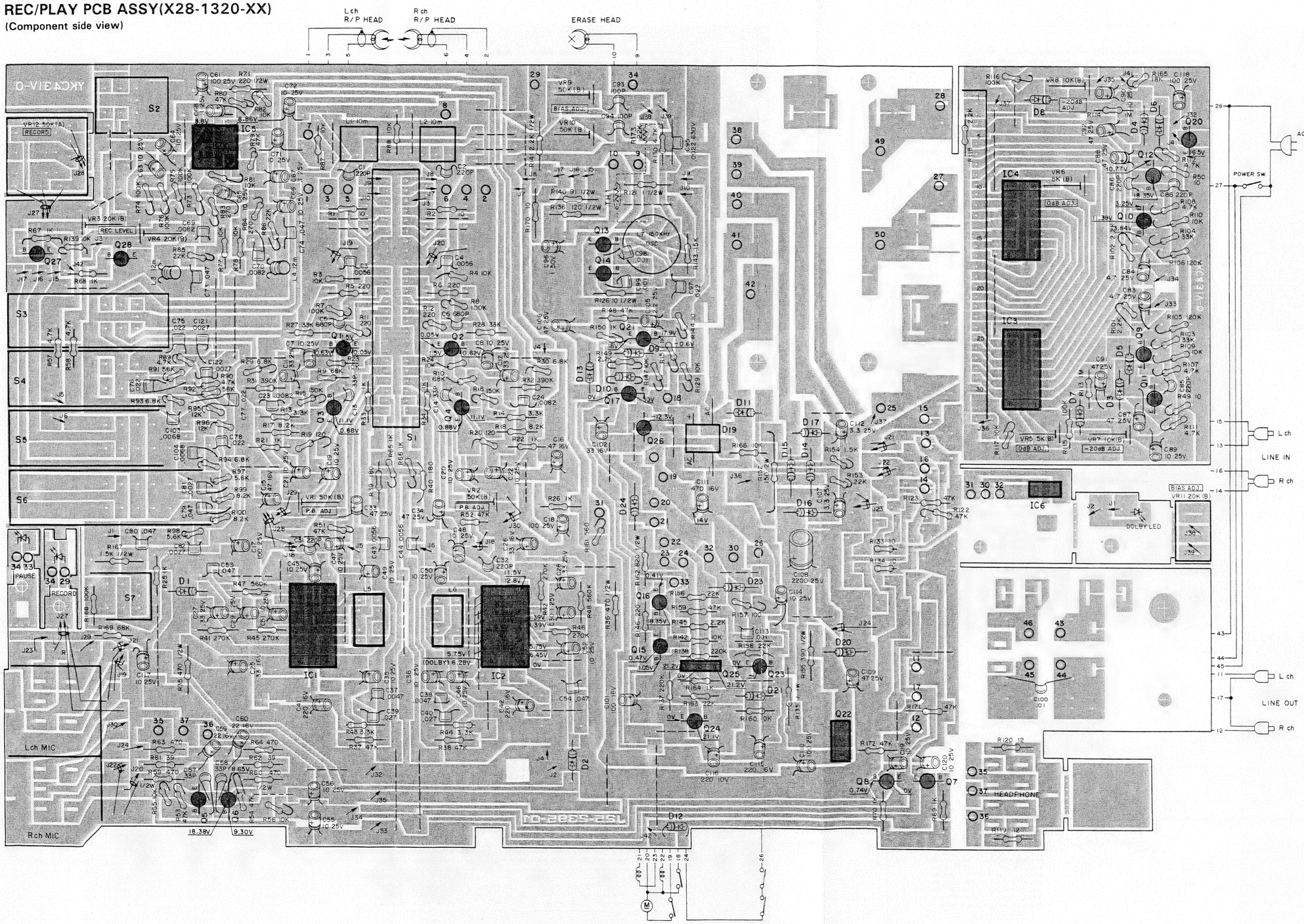

# EXPLODED VIEW



# PC BOARD

## REC/PLAY PCB ASSY(X28-1320-XX)

(Component side view)



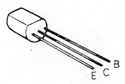

Q1~4 :2SC2634(S,T)
Q5,6 :2SC828(Q,R)
Q7~12,15,16,23,24,27,28 :2SC945(Q,R)
Q13,14 :2SC2060(Q,R)
Q17 :2SD468(B,C)
Q20 :2SC1775(D,E)
Q21 :2SA733A(Q,R)
Q22 :2SC1419(C,D)
Q25 :2SB772(Q,P)
Q26 :2SK163(M,N)
IC1,2 :LM1011N
IC3,4 :BA658
IC5 :AN6552
IC6 :DN6838(A,B)
D1,2,7~13,17,21 :1S2076
D3~6 :1N60PSP
D14~16,23,24 :ERB12-01R
D19 :ESAB03-02A
D20 :XZ-180
TH1 :SDT-1000

# KENWOOD

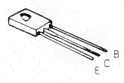
# STEREO CASSETTE DECK

Refer to the table on this page about the black screen parts.

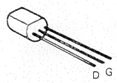
2SA733A
2SC828
2SC945
2SC1775
2SC2060
2SC2634
2SD468



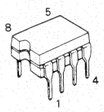

2SB772
2SD882



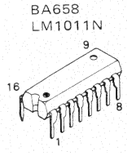

2SK163



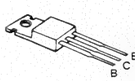

AN6552



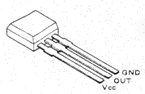

BA658
LM1011N




2SC1419




DN6838




(X28-1320-01)

| | | | | | |
|---|---|---|---|---|---|
| Q1~4 | : 2SC2634(S,T) | Q21 | : 2SA733A(Q,R) | IC 6 | : DN6838(A,B) |
| Q5,6 | : 2SC828(Q,R) | Q22 | : 2SC1419(C,D) | D1,2,7~13,17,21 | : 1S2076 |
| Q7~12,15,16,23,24,27,28 | : 2SC945(Q,R) | Q25 | : 2SB772(Q,P) | D3~6 | : 1N60 PSP |
| Q13,14 | : 2SC2060(Q,R) | Q26 | : 2SK163(M,N) | D14~16,23,24 | : ERB12-01R |
| Q17 | : 2SD468(B,C) | IC1,2 | : LM1011N | D19 | : ESAB03-02A |
| Q20 | : 2SC1775(D,E) | IC3,4 | : BA658 | D20 | : XZ-180 |
| | | IC5 | : AN6552 | TH1 | : SDT-1000 |

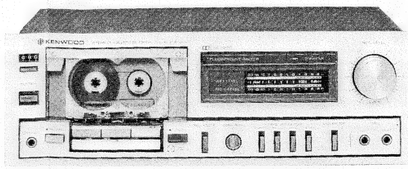
| | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Q1~4 | Q13,14 | IC1,2 | | | Q5,6,25,26,21,24,27,28 | Q7,8,15,16,23 | IC5 | Q17 | IC6 | | IC3 | Q22 | Q9,10 | Q11,12 | IC4 | | Q20 | | | | | | | | |
| | | | D17 | | D23 | D13 | D21,24 | D9 | D10 | D1,2 | D19,12 | | D20 | D11 | D3~6 | D16 | D14,15 | D7,8 | | | | | | | |
| VR9,10 | VR11 | | | VR1,2 | VR12 | | VR3,4 | | | | | VR5 | | | VR6 | | VR7,8 | | | | | | | | |

KX-500K

DC Voltages are measured with a 20 kΩ/V VOM

# KX-500

## STEREO CASSETTE DECK



## SPECIFICATIONS

| | |
|---|---|
| **Type** | Front Loading Stereo Cassette Deck with Dolby NR System |
| **Track System** | 4-Track, 2-Channel Stereo/Mono, Recording/Playback |
| **Recording System** | AC Bias System (Bias Frequency: 105 kHz) |
| **Erasing System** | AC System |
| **Tape Speed** | 4.76 cm/sec (1-7/8 ips) |
| **Heads** | Record and Playback Head × 1 (Hard Permalloy with Sendust Guard)<br>Erase Head × 1 (Ferrite) |
| **Motor** | Electronically-Controlled DC Motor |
| **Fast Winding Time** | Approx. 85 seconds with C-60 tape |
| **Frequency Response:** | |
| Normal Tape | 30 Hz to 15,000 Hz (40 Hz to 14,000 Hz ± 3 dB) |
| Chrome Tape | 30 Hz to 16,000 Hz (40 Hz to 15,000 Hz ± 3 dB) |
| Ferro-Chrome Tape | 30 Hz to 16,000 Hz (40 Hz to 15,000 Hz ± 3 dB) |
| Metal Tape | 30 Hz to 16,000 Hz (40 Hz to 15,000 Hz ± 3 dB) |
| **Signal to Noise Ratio:** | |
| Dolby NR ON (Over 5 kHz) | 62 dB (Normal Tape), 64 dB (Chrome, Ferro-Chrome and Metal Tape) |
| Dolby NR OFF | 52 dB (Normal Tape), 54 dB (Chrome, Ferro-Chrome and Metal Tape) |
| **Harmonic Distortion** | Less than 1.3% (at 1 kHz, 0 VU with Metal Tape) |
| **Wow and Flutter** | 0.05% (W.R.M.S.) |
| **Input Sensitivity/Impedance:** | |
| LINE × 2 | 77.5 mV/50 kohms |
| DIN × 1 | 0.1 mV/kohms: Europe, and U.K. Models |
| Microphones × 2 | 0.19 mV/10 kohms |
| **Output Level/Load Impedance:** | |
| LINE × 2 | 390 mV (0 VU)/100 kohms |
| DIN × 1 | 390 mV (0 VU)/100 kohms: Europe and U.K. Models |
| Headphones × 1 | 48.9 mV/8 ohms |
| **Built-in Features** | Dolby Noise Reduction System with LED Indicator<br>Four Position Tape Selector Switches (Normal/Ferro-Chrome/Chrome/Metal)<br>Fine Bias Adjustment Control<br>Full Auto Shut-Off Mechanism in all Modes<br>Recording Mute<br>LED Recording and Pause Indicators<br>Timer Stand by Mechanism<br>Three Digit Tape Counter<br>All-Electronic Fluorescent Display Level Meters (– 20 dB to + 8 dB)<br>Two Microphone Jacks, Headphone Jack<br>DIN Rec/Playback Connector (Europe and U.K. models only) |
| **Power Requirements** | AC 120 V, 60 Hz: U.S.A. and Canada Models<br>AC 120 V/220-240 V (Switchable), 50/60 Hz: Other Countries |
| **Power Consumption** | 12.0 watts: U.S.A. & Canada Models<br>18.0 watts: Other Countries |
| **Dimensions** | W: 400 mm (15-3/4")<br>H: 139 mm (5-15/32")<br>D: 281 mm (11-1/16") |
| **Weight** | 4.3 kg (9.5 lbs.) |
| **Supplied Accessories** | Head Cleaning Set × 1, Head Cover × 1 |
| **Reference Tapes** | Normal: MAXELL XLI<br>Fe-Cr: SONY Ferri-chrome<br>Chrome: TDK SA<br>Metal: TDK MA-R |

KENWOOD follows a policy of continuous advancements in development.
For this reason specifications may be changed without notice.

**Note:** Dolby is a trademark of Dolby Laboratories.

| X28-1320- | K -01 | M -02 | W -03 | P -04 |
|---|---|---|---|---|
| F1 | — | Yes | Yes | — |
| F2 | — | Yes | Yes | — |
| Power trans. | Yes | — | — | Yes |
| DIN | — | — | Yes | — |
| S8 | — | — | Yes | — |
| C3,4 | Yes | Yes | — | Yes |
| C123, 124 | — | — | Yes | — |
| C62 | — | — | Yes | — |
| R127, 128 | — | — | Yes | — |
| R135 | Yes | — | — | — |

DC Voltages are measured with a 20 kΩ/V VOM

# PARTS LIST



Refer to "exploded view" on page 19.

| Ref. No. 参照番号 | Parts No. 部品番号 | Description 部品名／規格 | Remarks 備考 |
|---|---|---|---|
| **KX-500 UNIT** | | | |
| 1 2A | - | TAPE INDICATOR | |
| 2 2B | - | METER DRESS PANEL | |
| 3 1C | - | BUTTON LEVER(L) | |
| 4 2C | - | BUTTON LEVER(R) | |
| 5 1C | - | COLLAR | |
| 6 2A,1C | - | LEVER CAP(D) | |
| 7 1C | - | COUNTER MOUT HARDWARE | |
| 8 3B | - | CHASSIS | |
| 9 3A | - | BOTTOM CASE | |
| 10 2B | - | REC LEVER(A) | |
| 11 3B | - | REC LEVER(B) | |
| 12 1B | - | SW LEVER(B) | |
| 13 1B | - | SW LEVER(C) | |
| 14 1B | 351-0008-04 | STRING | |
| 15 1A | A02-0325-05 | CASE | * |
| 16 3A | A20-1993-12 | FRONT PANEL | *K |
| 16 3A | A20-1993-12 | FRONT PANEL | PM |
| 16 3A | A20-1993-12 | FRONT PANEL | SU |
| 16 3A | A20-1993-12 | FRONT PANEL | WX |
| 16 3A | A20-1994-12 | FRONT PANEL | T |
| 16 3A | A20-1995-12 | FRONT PANEL | H |
| 16 3A | A20-2010-02 | FRONT PANEL | M2 |
| 17 2A | A21-0679-12 | DRESS PANEL | *K |
| 17 2A | A21-0679-12 | DRESS PANEL | PM |
| 17 2A | A21-0679-12 | DRESS PANEL | SU |
| 17 2A | A21-0679-12 | DRESS PANEL | TW |
| 17 2A | A21-0679-12 | DRESS PANEL | HX |
| 17 2A | A21-0694-02 | DRESS PANEL | M2 |
| 18 2A | A21-0680-04 | CASSETTE DRESS PLATE | * |
| - | B46-0055-20 | WARRANTY CARD | P |
| - | B46-0060-00 | WARRANTY CARD | T |
| - | B46-0061-20 | WARRANTY CARD | K |
| - | B46-0062-20 | WARRANTY CARD | UH |
| - | B46-0063-00 | WARRANTY CARD | U |
| - | B46-0064-00 | WARRANTY CARD | X |
| - | B50-2360-00 | INSTRUCTION MANUAL | *K |
| - | B50-2360-00 | INSTRUCTION MANUAL | SU |
| - | B50-2360-00 | INSTRUCTION MANUAL | W |
| - | B50-2361-00 | INSTRUCTION MANUAL | PM |
| - | B50-2361-00 | INSTRUCTION MANUAL | X |
| - | B50-2362-00 | INSTRUCTION MANUAL | T |
| - | B50-2363-00 | INSTRUCTION MANUAL | H |
| - | B50-2395-00 | INSTRUCTION MANUAL | M2 |
| - | B59-0018-00 | SERVICE STATIONS' LIST | U |
| 19 2A | B07-0594-04 | COUNTER WINDOW | * |
| 20 2A | B10-0515-14 | FRONT GLASS | * |
| 21 2B | B11-0309-04 | FILTER | * |
| 22 2A,1C | B35-0209-05 | COUNTER | * |
| 23 3A,3C | D15-0160-04 | SMALL PULLEY | |
| 24 1B | D15-0528-05 | PULLEY | |
| 25 1D | D15-0517-04 | INTERMEDIATE PULLEY | * |
| 26 1C | D16-0225-04 | COUNTER BELT(A) | * |
| 27 1D | D16-0226-04 | COUNTER BELT(B) | * |
| 28 2A | D40-0477-05 | MECHANISM ASSY | |
| 29 3A | E03-0102-05 | POWER SUPPLY SELECTOR | MS |
| 29 3A | E03-0102-05 | POWER SUPPLY SELECTOR | UT |
| 29 3A | E03-0102-05 | POWER SUPPLY SELECTOR | WH |
| 29 3A | E03-0102-05 | POWER SUPPLY SELECTOR | X |
| 29 3A | E03-0102-05 | POWER SUPPLY SELECTOR | M2 |

| Ref. No. 参照番号 | Parts No. 部品番号 | Description 部品名／規格 | Remarks 備考 |
|---|---|---|---|
| 30 2A | E23-0015-04 | LUG | |
| 31 3B | E30-0181-05 | POWER CORD | KP |
| 31 3B | E30-1305-15 | POWER CORD | MU |
| 31 3B | E30-1305-15 | POWER CORD | M2 |
| 31 3B | E30-1328-05 | POWER CORD | ST |
| 31 3B | E30-1329-05 | POWER CORD | WH |
| 31 3B | E30-1342-05 | POWER CORD | X |
| 32 2B,1D | F07-0661-04 | HEAD COVER | * |
| 33 3A | F07-0662-04 | FRONT COVER ASSY | * |
| F1 ,2 | F05-1023-05 | FUSE (1A) | MS |
| F1 ,2 | F05-1023-05 | FUSE (1A) | UX |
| F1 ,2 | F05-1023-05 | FUSE (1A) | M2 |
| F1 ,2 | F06-1021-05 | FUSE (1A) | T |
| F1 ,2 | F06-1021-05 | FUSE (1A) | WH |
| 34 2B | G01-0680-14 | TENSION SPRING | |
| 35 3B | G01-0774-04 | TORSION SPRING(A) | * |
| 36 3B | G01-0775-04 | TORSION SPRING(B) | * |
| 37 2B | G01-0776-04 | COMPRESSION SPRING | * |
| 38 3B | G10-0405-04 | FELT | * |
| - | H01-2376-04 | CARTON BOX | *K |
| - | H01-2376-04 | CARTON BOX | MS |
| - | H01-2376-04 | CARTON BOX | UH |
| - | H01-2376-04 | CARTON BOX | X |
| - | H01-2377-04 | CARTON BOX | T |
| - | H01-2378-04 | CARTON BOX | W |
| - | H01-2379-04 | CARTON BOX | P |
| - | H01-2417-04 | CARTON BOX | M2 |
| - | H10-2261-02 | POLYSTYREN FOAMED FIX. | * |
| - | H10-2267-04 | POLYSTYREN FOAMED FIX. | * |
| - | H20-0417-04 | POLYETHYLENE COVER | M |
| - | H20-0417-04 | POLYETHYLENE COVER | M2 |
| - | H20-0441-04 | POLYETHYLENE COVER | KP |
| - | H20-0441-04 | POLYETHYLENE COVER | SU |
| - | H20-0441-04 | POLYETHYLENE COVER | TW |
| - | H20-0441-04 | POLYETHYLENE COVER | HX |
| - | H25-0078-04 | COVER | |
| 39 2B | K23-0644-04 | KNOB(VOLUME,OUT) | * |
| 40 2B | K23-0645-04 | KNOB(VOLUME,IN) | * |
| 41 2B | K23-0646-04 | KNOB(BIAS) | * |
| 42 2A | K27-0327-04 | BUTTON(POWER) | * |
| 43 3A | K27-0328-04 | PUSHBUTTON | * |
| 44 3A | K29-0670-04 | PLAY BUTTON | * |
| 45 3A | K29-0671-04 | FF BUTTON | * |
| 46 3A | K29-0672-04 | REW BUTTON | * |
| 47 3A | K29-0673-04 | STOP BUTTON | * |
| 48 2A | K29-0674-04 | REC BUTTON | * |
| 49 2B | K29-0675-04 | PAUSE BUTTON | * |
| 50 2A | K29-0676-03 | RESET BUTTON(A) | * |
| 51 2A | K29-0678-04 | RESET BUTTON(B) | * |
| 52 2A | N08-0411-05 | DRESS SCREW | * |
| 53 3A | N09-0100-14 | PULLEY SCREW | * |
| 54 2D | S46-1315-15 | LEAF SWITCH | * |
| S1 | S40-1311-15 | POWER SWITCH FIG55 | *K |
| S1 | S40-1311-15 | POWER SWITCH FIG55 | P |
| S1 | S40-1312-15 | POWER SWITCH FIG55 | MS |
| S1 | S40-1312-15 | POWER SWITCH FIG55 | UX |
| S1 | S40-1312-15 | POWER SWITCH FIG55 | M2 |
| S1 | S40-2310-15 | POWER SWITCH FIG55 | TW |
| S1 | S40-2310-15 | POWER SWITCH FIG55 | H |

| Ref. No. 参照番号 | Parts No. 部品番号 | Description 部品名／規格 | Remarks 備考 |
|---|---|---|---|
| 56 2A,1D | T32-0010-05 | ERASE HEAD | |
| 57 2A,1D | T34-0010-05 | RECORD/PLAYBACK HEAD | * |
| 58 2A,3C | T42-0105-05 | MOTOR | |
| - | W01-0301-05 | HEAD CLEANING STICKS | |
| 59 1B | X28-1320-01 | REC/PLAY PCB ASSY | *K |
| 59 1B | X28-1320-02 | REC/PLAY PCB ASSY | MS |
| 59 1B | X28-1320-02 | REC/PLAY PCB ASSY | UX |
| 59 1B | X28-1320-02 | REC/PLAY PCB ASSY | M2 |
| 59 1B | X28-1320-03 | REC/PLAY PCB ASSY | TW |
| 59 1B | X28-1320-03 | REC/PLAY PCB ASSY | H |
| 59 1B | X28-1320-04 | REC/PLAY PCB ASSY | P |
| 60 3A | - | BUTTON FRAMEWORK | * |
| **REC/PLAY PCB (X 28-1320-XX)** | | | |
| 101 1B | - | SHIELD COVER | KP |
| 102 2B | - | METER HOLDER | |
| 103 2B | - | CUSHION | |
| 104 2B | B31-0513-05 | FL-METER | * |
| C1 ,2 | C71-1722-15 | CERAMIC 220PF J | |
| C3 ,4 | C45-1756-25 | MYLAR 0.0056UF J | KM |
| C3 ,4 | C45-1756-25 | MYLAR 0.0056UF J | P |
| C5 ,6 | C71-1768-15 | CERAMIC 680PF J | |
| C7 ,8 | C25-1410-67 | LL-ELEC 10UF 25WV | |
| C11 ,12 | C24-1433-61 | ELECTRO 33UF 25WV | |
| C13 ,14 | C71-1733-05 | CERAMIC 33PF J | |
| C15 ,16 | C24-1247-61 | ELECTRO 47UF 16WV | |
| C17 ,18 | C24-1410-71 | ELECTRO 100UF 25WV | |
| C19 -22 | C24-1410-61 | ELECTRO 10UF 25WV | |
| C23 ,24 | C45-1782-25 | MYLAR 0.0082UF J | |
| C25 ,26 | C24-1233-61 | ELECTRO 33UF 16WV | |
| C27 ,28 | C25-1433-47 | LL-ELEC 0.33UF 25WV | |
| C29 ,30 | C25-1410-47 | LL-ELEC 0.1UF 25WV | |
| C31 ,32 | C71-1722-15 | CERAMIC 220PF J | |
| C33 ,34 | C25-1447-47 | LL-ELEC 0.47UF 25WV | |
| C35 ,36 | C24-1410-61 | ELECTRO 10UF 25WV | |
| C37 ,38 | C45-1747-25 | MYLAR 0.0047UF J | |
| C39 ,40 | C45-1727-35 | MYLAR 0.027UF J | |
| C41 ,42 | C24-1222-71 | ELECTRO 220UF 16WV | |
| C43 ,44 | C45-1756-25 | MYLAR 0.0056UF J | |
| C45 -52 | C24-1410-61 | ELECTRO 10UF 25WV | |
| C53 ,54 | C45-1747-36 | MYLAR 0.047UF K | |
| C55 ,56 | C24-1410-61 | ELECTRO 10UF 25WV | |
| C57 ,58 | C71-1733-05 | CERAMIC 33PF J | |
| C59 ,60 | C24-1222-61 | ELECTRO 22UF 16WV | |
| C61 | C24-1410-71 | ELECTRO 100UF 25WV | |
| C62 | C54-3310-39 | CERAMIC 0.01UF P | W |
| C63 -66 | C24-1410-61 | ELECTRO 10UF 25WV | |
| C67 ,68 | C25-1410-47 | LL-ELEC 0.1UF 25WV | |
| C69 ,70 | C45-1782-25 | MYLAR 0.0082UF J | |
| C71 ,72 | C25-1410-67 | LL-ELEC 10UF 25WV | |
| C73 ,74 | C45-1747-35 | MYLAR 0.047UF J | |
| C75 -78 | C45-1722-35 | MYLAR 0.022UF J | |
| C79 ,80 | C45-1747-35 | MYLAR 0.047UF J | |
| C81 ,82 | C45-1727-25 | MYLAR 0.0027UF K | |
| C83 ,84 | C24-1447-51 | ELECTRO 4.7UF 25WV | |
| C85 ,86 | C71-1722-15 | CERAMIC 220PF J | |
| C87 ,88 | C25-1447-47 | LL-ELEC 0.47UF 25WV | |
| C89 ,90 | C24-1410-61 | ELECTRO 10UF 25WV | |
| C91 ,92 | C25-1447-47 | LL-ELEC 0.47UF 25WV | |
| C93 ,94 | C71-1710-15 | CERAMIC 100PF J | |

| Ref. No. 参照番号 | Parts No. 部品番号 | Description 部品名／規格 | Remarks 備考 |
|---|---|---|---|
| C95 | C91-0327-05 | FILM 2200PF 630WV | |
| C96 | C24-1710-51 | ELECTRO 1UF 50WV | |
| C97 | C45-1722-36 | MYLAR 0.022UF K | |
| C98 ,99 | C45-1710-26 | MYLAR 0.001UF K | |
| C100 | C54-3310-39 | CERAMIC 0.01UF P | W |
| C100 | C90-0145-05 | CERAMIC 0.01UF 125VAC | K |
| C100 | C91-0308-05 | CERAMIC 0.01UF 125VAC | M |
| C101 | C25-1210-77 | LL-ELEC 100UF 16WV | |
| C102 | C24-1233-61 | ELECTRO 33UF 16WV | |
| C103,104 | C45-1768-25 | MYLAR 0.0068UF J | |
| C105 | C24-1422-51 | ELECTRO 2.2UF 25WV | |
| C106 | C24-1447-61 | ELECTRO 47UF 25WV | |
| C107 | C24-1433-51 | ELECTRO 3.3UF 25WV | |
| C108 | C24-1422-81 | ELECTRO 2200UF 25WV | |
| C109 | C24-1447-61 | ELECTRO 47UF 25WV | |
| C110 | C24-1410-71 | ELECTRO 100UF 25WV | |
| C111 | C24-1247-71 | ELECTRO 470UF 16WV | |
| C112 | C24-1433-51 | ELECTRO 3.3UF 25WV | |
| C113 | C45-1710-26 | MYLAR 0.001UF K | |
| C114 | C24-1410-61 | ELECTRO 10UF 25WV | |
| C115 | C24-1222-71 | ELECTRO 220UF 16WV | |
| C116 | C24-1022-71 | ELECTRO 220UF 10WV | |
| C117 | C24-1410-61 | ELECTRO 10UF 25WV | |
| C118 | C24-1410-71 | ELECTRO 100UF 25WV | |
| C119,120 | C24-1410-61 | ELECTRO 10UF 25WV | |
| C121,122 | C45-1727-25 | MYLAR 0.0027UF K | |
| C123,124 | C71-1722-15 | CERAMIC 220PF J | W |
| 105 1B | E06-0541-05 | DIN CONNECTOR | *W |
| 106 2B | E11-0313-05 | MIC JACK | * |
| 107 2B | E11-0314-05 | HEADPHONE JACK | * |
| 108 3B | E30-1337-05 | AUDIO CORD (REC) | * |
| 109 3B | E30-1338-05 | AUDIO CORD (PLAY) | * |
| - | J13-0055-05 | FUSE HOLDER | WP |
| 110 1B | L01-6281-05 | POWER TRANSFORMER | *K |
| 110 1B | L01-6281-05 | POWER TRANSFORMER | P |
| 110 1B | L01-6284-05 | POWER TRANSFORMER | TW |
| 110 1B | L01-6284-05 | POWER TRANSFORMER | H |
| 110 1B | L01-6287-05 | POWER TRANSFORMER | MS |
| 110 1B | L01-6287-05 | POWER TRANSFORMER | UX |
| 110 1B | L01-6287-05 | POWER TRANSFORMER | M2 |
| L1 ,2 | L39-0304-05 | TRAP COIL 10MH | |
| L3 ,4 | L39-0314-05 | INDUCTOR | * |
| L5 ,6 | L79-0310-05 | DOLBY FILTER | * |
| L7 | L32-0508-05 | OSC COIL | * |
| R35 ,36 | R43-1347-15 | FL-PROOF RD470 J 2H | |
| R59 ,60 | R43-1347-15 | FL-PROOF RD470 J 2H | |
| R71 | R43-1322-15 | FL-PROOF RD220 J 2H | |
| R121 | R43-1310-95 | FL-PROOF RD1 J 2H | |
| R126 | R43-1310-05 | FL-PROOF RD10 J 2H | |
| R132 | R92-0511-05 | FUSE-RESIST10 J 2E | |
| R135 | R47-1401-05 | FL-PROOF RS1 J 3A | |
| R136 | R43-1312-15 | FL-PROOF RD120 J 2H | |
| R140 | R43-1391-05 | FL-PROOF RD91 J 2H | |
| R141 | R43-1322-25 | FL-PROOF RD2,2K J 2H | |
| R152 | R47-5415-15 | FL-PROOF RS150 J 3D | |
| R155 | R43-1339-15 | FL-PROOF RD390 J 2H | |
| R162 | R43-1382-15 | FL-PROOF RD820 J 2H | |
| R167 | R43-1315-25 | FL-PROOF RD1,5K J 2H | |
| R170 | R92-0511-05 | FUSE-RESIST10 J 2E | |
| VR1 ,2 | R12-4302-05 | TRIMMING POT 50K PLAY | |

# PARTS LIST

| Ref. No. 参照番号 | Parts No. 部品番号 | Description 部品名／規格 | Remarks 備考 |
|---|---|---|---|
| 0 2A | E23-0015-04 | LUG | |
| 1 3B | E30-0181-05 | POWER CORD | KP |
| 1 3B | E30-1305-15 | POWER CORD | MU |
| 1 3B | E30-1305-15 | POWER CORD | M2 |
| 1 3B | E30-1328-05 | POWER CORD | ST |
| 1 3B | E30-1329-05 | POWER CORD | WH |
| 1 3B | E30-1342-05 | POWER CORD | X |
| 2 2B,1D | F07-0661-04 | HEAD COVER | * |
| 3 3A | F07-0662-04 | FRONT COVER ASSY | * |
| 1 ,2 | F05-1023-05 | FUSE (1A) | MS |
| 1 ,2 | F05-1023-05 | FUSE (1A) | UX |
| 1 ,2 | F05-1023-05 | FUSE (1A) | M2 |
| 1 ,2 | F06-1021-05 | FUSE (1A) | T |
| 1 ,2 | F06-1021-05 | FUSE (1A) | WH |
| 4 2B | G01-0680-14 | TENSION SPRING | |
| 5 3B | G01-0774-04 | TORSION SPRING(A) | * |
| 6 3B | G01-0775-04 | TORSION SPRING(B) | * |
| 7 2B | G01-0776-04 | COMPRESSION SPRING | * |
| 8 3B | G10-0405-04 | FELT | * |
| | H01-2376-04 | CARTON BOX | *K |
| | H01-2376-04 | CARTON BOX | MS |
| | H01-2376-04 | CARTON BOX | UH |
| | H01-2376-04 | CARTON BOX | X |
| | H01-2377-04 | CARTON BOX | T |
| | H01-2378-04 | CARTON BOX | W |
| | H01-2379-04 | CARTON BOX | P |
| | H01-2417-04 | CARTON BOX | M2 |
| | H10-2261-02 | POLYSTYREN FOAMED FIX. | * |
| | H10-2267-04 | POLYSTYREN FOAMED FIX. | * |
| | H20-0417-04 | POLYETHYLENE COVER | M |
| | H20-0417-04 | POLYETHYLENE COVER | M2 |
| | H20-0417-04 | POLYETHYLENE COVER | KP |
| | H20-0441-04 | POLYETHYLENE COVER | SU |
| | H20-0441-04 | POLYETHYLENE COVER | TW |
| | H20-0441-04 | POLYETHYLENE COVER | HX |
| | H25-0078-04 | COVER | |
| 9 2B | K23-0644-04 | KNOB(VOLUME,OUT) | * |
| 0 2B | K23-0645-04 | KNOB(VOLUME,IN) | * |
| 1 2B | K23-0646-04 | KNOB(BIAS) | * |
| 2 2A | K27-0327-04 | BUTTON(POWER) | * |
| 3 3A | K27-0328-04 | PUSHBUTTON | * |
| 4 3A | K29-0670-04 | PLAY BUTTON | * |
| 5 3A | K29-0671-04 | FF BUTTON | * |
| 6 3A | K29-0672-04 | REW BUTTON | * |
| 7 3A | K29-0673-04 | STOP BUTTON | * |
| 8 2A | K29-0674-04 | REC BUTTON | * |
| 9 2B | K29-0675-04 | PAUSE BUTTON | * |
| 0 2A | K29-0676-03 | RESET BUTTON(A) | * |
| 1 2A | K29-0678-04 | RESET BUTTON(B) | * |
| 2 2A | N08-0411-05 | DRESS SCREW | * |
| 3 3A | N09-0100-14 | PULLEY SCREW | * |
| 4 2D | S46-1315-15 | LEAF SWITCH | * |
| 1 | S40-1311-15 | POWER SWITCH FIG55 | *K |
| 1 | S40-1311-15 | POWER SWITCH FIG55 | P |
| 1 | S40-1312-15 | POWER SWITCH FIG55 | MS |
| 1 | S40-1312-15 | POWER SWITCH FIG55 | UX |
| 1 | S40-1312-15 | POWER SWITCH FIG55 | M2 |
| 1 | S40-2310-15 | POWER SWITCH FIG55 | TW |
| 1 | S40-2310-15 | POWER SWITCH FIG55 | H |

| Ref. No. 参照番号 | Parts No. 部品番号 | Description 部品名／規格 | Remarks 備考 |
|---|---|---|---|
| 56 2A,1D | T32-0010-05 | ERASE HEAD | |
| 57 2A,1D | T34-0010-05 | RECORD/PLAYBACK HEAD | * |
| 58 2A,3C | T42-0105-05 | MOTOR | |
| - | W01-0301-05 | HEAD CLEANING STICKS | |
| 59 1B | X28-1320-01 | REC/PLAY PCB ASSY | *K |
| 59 1B | X28-1320-02 | REC/PLAY PCB ASSY | MS |
| 59 1B | X28-1320-02 | REC/PLAY PCB ASSY | UX |
| 59 1B | X28-1320-02 | REC/PLAY PCB ASSY | M2 |
| 59 1B | X28-1320-03 | REC/PLAY PCB ASSY | TW |
| 59 1B | X28-1320-03 | REC/PLAY PCB ASSY | H |
| 59 1B | X28-1320-04 | REC/PLAY PCB ASSY | P |
| 60 3A | - | BUTTON FRAMEWORK | * |
| REC/PLAY PCB (X 28-1320-XX) | | | |
| 101 1B | - | SHIELD COVER | KP |
| 102 2B | - | METER HOLDER | |
| 103 2B | - | CUSHION | |
| 104 2B | B31-0513-05 | FL-METER | * |
| C1 ,2 | C71-1722-15 | CERAMIC 220PF J | |
| C3 ,4 | C45-1756-25 | MYLAR 0.0056UF J | KM |
| C3 ,4 | C45-1756-25 | MYLAR 0.0056UF J | P |
| C5 ,6 | C71-1768-15 | CERAMIC 680PF J | |
| C7 ,8 | C25-1410-67 | LL-ELEC 10UF 25WV | |
| C11 ,12 | C24-1433-61 | ELECTRO 33UF 25WV | |
| C13 ,14 | C71-1733-05 | CERAMIC 33PF J | |
| C15 ,16 | C24-1247-61 | ELECTRO 47UF 16WV | |
| C17 ,18 | C24-1410-71 | ELECTRO 100UF 25WV | |
| C19 -22 | C24-1410-61 | ELECTRO 10UF 25WV | |
| C23 ,24 | C45-1782-25 | MYLAR 0.0082UF J | |
| C25 ,26 | C24-1233-61 | ELECTRO 33UF 16WV | |
| C27 ,28 | C25-1433-47 | LL-ELEC 0.33UF 25WV | |
| C29 ,30 | C25-1410-47 | LL-ELEC 0.1UF 25WV | |
| C31 ,32 | C71-1722-15 | CERAMIC 220PF J | |
| C33 ,34 | C25-1447-47 | LL-ELEC 0.47UF 25WV | |
| C35 ,36 | C24-1410-61 | ELECTRO 10UF 25WV | |
| C37 ,38 | C45-1747-25 | MYLAR 0.0047UF J | |
| C39 ,40 | C45-1727-35 | MYLAR 0.027UF J | |
| C41 ,42 | C24-1222-71 | ELECTRO 220UF 16WV | |
| C43 ,44 | C45-1756-25 | MYLAR 0.0056UF J | |
| C45 -52 | C24-1410-61 | ELECTRO 10UF 25WV | |
| C53 ,54 | C45-1747-36 | MYLAR 0.047UF K | |
| C55 ,56 | C24-1410-61 | ELECTRO 10UF 25WV | |
| C57 ,58 | C71-1733-05 | CERAMIC 33PF J | |
| C59 ,60 | C24-1222-61 | ELECTRO 22UF 16WV | |
| C61 | C24-1410-71 | ELECTRO 100UF 25WV | |
| C62 | C54-3310-39 | CERAMIC 0.01UF P | W |
| C63 -66 | C24-1410-61 | ELECTRO 10UF 25WV | |
| C67 ,68 | C25-1410-47 | LL-ELEC 0.1UF 25WV | |
| C69 ,70 | C45-1782-25 | MYLAR 0.0082UF J | |
| C71 ,72 | C25-1410-67 | LL-ELEC 10UF 25WV | |
| C73 ,74 | C45-1747-35 | MYLAR 0.047UF J | |
| C75 -78 | C45-1722-35 | MYLAR 0.022UF J | |
| C79 ,80 | C45-1747-35 | MYLAR 0.047UF J | |
| C81 ,82 | C45-1727-25 | MYLAR 0.0027UF K | |
| C83 ,84 | C24-1447-51 | ELECTRO 4.7UF 25WV | |
| C85 ,86 | C71-1722-15 | CERAMIC 220PF J | |
| C87 ,88 | C25-1447-47 | LL-ELEC 0.47UF 25WV | |
| C89 ,90 | C24-1410-61 | ELECTRO 10UF 25WV | |
| C91 ,92 | C25-1447-47 | LL-ELEC 0.47UF 25WV | |
| C93 ,94 | C71-1710-15 | CERAMIC 100PF J | |

KX-500 KX-500

# PARTS LIST

| Ref. No. 参照番号 | Parts No. 部品番号 | Description 部品名／規格 | Remarks 備考 |
|---|---|---|---|
| C95 | C91-0327-05 | FILM 2200PF 630WV | |
| C96 | C24-1710-51 | ELECTRO 1UF 50WV | |
| C97 | C45-1722-36 | MYLAR 0.022UF K | |
| C98 ,99 | C45-1710-26 | MYLAR 0.001UF K | |
| C100 | C54-3310-39 | CERAMIC 0.01UF P | W |
| C100 | C90-0145-05 | CERAMIC 0.01UF 125VAC | K |
| C100 | C91-0308-05 | CERAMIC 0.01UF 125VAC | M |
| C101 | C25-1210-77 | LL-ELEC 100UF 16WV | |
| C102 | C24-1233-61 | ELECTRO 33UF 16WV | |
| C103,104 | C45-1768-25 | MYLAR 0.0068UF J | |
| C105 | C24-1422-51 | ELECTRO 2.2UF 25WV | |
| C106 | C24-1447-61 | ELECTRO 47UF 25WV | |
| C107 | C24-1433-51 | ELECTRO 3.3UF 25WV | |
| C108 | C24-1422-81 | ELECTRO 2200UF 25WV | |
| C109 | C24-1447-61 | ELECTRO 47UF 25WV | |
| C110 | C24-1410-71 | ELECTRO 100UF 25WV | |
| C111 | C24-1247-71 | ELECTRO 470UF 16WV | |
| C112 | C24-1433-51 | ELECTRO 3.3UF 25WV | |
| C113 | C45-1710-26 | MYLAR 0.001UF K | |
| C114 | C24-1410-61 | ELECTRO 10UF 25WV | |
| C115 | C24-1222-71 | ELECTRO 220UF 16WV | |
| C116 | C24-1022-71 | ELECTRO 220UF 10WV | |
| C117 | C24-1410-61 | ELECTRO 10UF 25WV | |
| C118 | C24-1410-71 | ELECTRO 100UF 25WV | |
| C119,120 | C24-1410-61 | ELECTRO 10UF 25WV | |
| C121,122 | C45-1727-25 | MYLAR 0.0027UF K | |
| C123,124 | C71-1722-15 | CERAMIC 220PF J | W |
| 105 1B | E06-0541-05 | DIN CONNECTOR | *W |
| 106 2B | E11-0313-05 | MIC JACK | * |
| 107 2B | E11-0314-05 | HEADPHONE JACK | * |
| 108 3B | E30-1337-05 | AUDIO CORD (REC) | * |
| 109 3B | E30-1338-05 | AUDIO CORD (PLAY) | * |
| - | J13-0055-05 | FUSE HOLDER | WP |
| 110 1B | L01-6281-05 | POWER TRANSFORMER | *K |
| 110 1B | L01-6281-05 | POWER TRANSFORMER | P |
| 110 1B | L01-6284-05 | POWER TRANSFORMER | TW |
| 110 1B | L01-6284-05 | POWER TRANSFORMER | H |
| 110 1B | L01-6287-05 | POWER TRANSFORMER | MS |
| 110 1B | L01-6287-05 | POWER TRANSFORMER | UX |
| 110 1B | L01-6287-05 | POWER TRANSFORMER | M2 |
| L1 ,2 | L39-0304-05 | TRAP COIL 10MH | |
| L3 ,4 | L39-0314-05 | INDUCTOR | * |
| L5 ,6 | L79-0310-05 | DOLBY FILTER | * |
| L7 | L32-0508-05 | OSC COIL | * |
| R35 ,36 | R43-1347-15 | FL-PROOF RD470 J 2H | |
| R59 ,60 | R43-1347-15 | FL-PROOF RD470 J 2H | |
| R71 | R43-1322-15 | FL-PROOF RD220 J 2H | |
| R121 | R43-1310-95 | FL-PROOF RD1 J 2H | |
| R126 | R43-1310-05 | FL-PROOF RD10 J 2H | |
| R132 | R92-0511-05 | FUSE-RESIST10 J 2E | |
| R135 | R47-1401-05 | FL-PROOF RS1 J 3A | |
| R136 | R43-1312-15 | FL-PROOF RD120 J 2H | |
| R140 | R43-1391-05 | FL-PROOF RD91 J 2H | |
| R141 | R43-1322-25 | FL-PROOF RD2.2K J 2H | |
| R152 | R47-5415-15 | FL-PROOF RS150 J 3D | |
| R155 | R43-1339-15 | FL-PROOF RD390 J 2H | |
| R162 | R43-1382-15 | FL-PROOF RD820 J 2H | |
| R167 | R43-1315-25 | FL-PROOF RD1,5K J 2H | |
| R170 | R92-0511-05 | FUSE-RESIST10 J 2E | |
| VR1 ,2 | R12-4302-05 | TRIMMING POT 50K PLAY | |

| Ref. No. 参照番号 | Parts No. 部品番号 | Description 部品名／規格 | Remarks 備考 |
|---|---|---|---|
| VR3 ,4 | R12-3301-05 | TRIMMING POT 20K REC | |
| VR5 ,6 | R12-2302-05 | TRIMMING POT 5K ODB | |
| VR7 ,8 | R12-3302-05 | TRIMMING POT 10K -20DB | |
| VR9 ,10 | R12-4302-05 | TRIMMING POT 50K BIAS | |
| VR11 | R01-3305-05 | POT.20K BIAS | * |
| VR12 | R19-4306-05 | POT. 50K (DUAL) VOLUME | * |
| S1 | S31-0306-05 | SLIDE SW FIG112 | * |
| S2 | S40-2311-05 | PUSH SW FIG113 | * |
| S3 -6 | S40-4304-05 | PUSH SW FIG114 | * |
| S7 | S40-2312-05 | PUSH SW FIG115 | * |
| S8 | S31-2307-05 | SLIDE SW | W |
| 116 2B | V11-1100-20 | LN-324GP (GRN) | * |
| 117 2B | V11-7200-40 | PG-2132D (GRN) | * |
| 118 2B | V11-7200-50 | AR-2132D (RED) | * |
| D1 ,2 | V11-0271-05 | 1S2076 | |
| D3 -6 | V11-0051-05 | 1N60PSP | |
| D7 -13 | V11-0271-05 | 1S2076 | |
| D14 -16 | V11-7100-60 | ERB12-01R | |
| D17 | V11-0271-05 | 1S2076 | |
| D19 | V11-7100-11 | ESAB03-02A | |
| D20 | V11-4102-90 | XZ-180 | * |
| D21 | V11-0271-05 | 1S2076 | |
| D23 ,24 | V11-7100-60 | ERB12-01R | |
| IC1 ,2 | V30-0277-10 | LM-1011N | |
| IC3 ,4 | V30-0347-10 | BA658 | |
| IC5 | V30-0405-10 | AN6552 | * |
| IC6 | V30-0355-10 | DN6838 | |
| Q1 -4 | V03-2634-10 | 2SC2634(S,T) | * |
| Q5 ,6 | V03-0479-05 | 2SC828(Q,R) | |
| Q7 -12 | V03-0270-05 | 2SC945(Q,R) | |
| Q13 ,14 | V03-2060-10 | 2SC2060(Q,R) | |
| Q15 ,16 | V03-0270-05 | 2SC945(Q,R) | |
| Q17 | V04-0468-10 | 2SD468(B,C) | * |
| Q20 | V03-1775-40 | 2SC1775(D,E) | |
| Q21 | V01-0733-30 | 2SA733A(R,Q) | |
| Q22 | V03-0343-05 | 2SC1419(C,D) | |
| Q23 ,24 | V03-0270-05 | 2SC945(Q,R) | |
| Q25 | V02-0772-10 | 2SB772(Q,P) | * |
| Q26 | V09-0144-20 | 2SK163(M,N) | |
| Q27 ,28 | V03-0270-05 | 2SC945(Q,R) | |
| TH1 | V22-0005-05 | SDT-1000 | |
| MECHANISM ASS'Y (D40-0477-05) | | | |
| 201 2D | - | CHASSIS | |
| 202 1D | - | HEAD PANEL | |
| 203 1C | - | LUG | |
| 204 2C,2D | - | CASSETTE HOLDER SHAFT | |
| 205 2C,2D | - | PANEL HOLDER | |
| 206 1D | - | PREVENTION LEVER | |
| 207 1C | - | PUSHBUTTON FRAMEWORK | |
| 208 1C | - | PUSHBUTTON LEVER | |
| 209 2C | - | PREVENTION ANGLE | |
| 210 2C | - | PREVENTION COLLAR | |
| 211 1C | - | INTERCONNECTION LEVER | |
| 213 2D | - | RF LEVER | |
| 214 2D | - | RF LEVER METAL | |
| 215 2D | - | SWITCH ARM | |
| 216 2C | - | REC ARM | |
| 217 2C | - | REC SW HARDWARE | |
| 218 2C | - | REW ARM | |
| 219 2C | - | PLAY ARM | |
| 220 2D | - | FF ARM | |
| 221 3D | - | PAUSE ARM | |

# PARTS LIST

| Ref. No. 参照番号 | Parts No. 部品番号 | Description 部品名／規格 | Remarks 備考 |
|---|---|---|---|
| 222 3D | - | PAUSE CAM | |
| 223 2C,2D | - | OPERATION LEVER | |
| 224 2D | - | OPERATION LEVER(STOP) | |
| 225 2D | - | LEVER SPRING HOLDER | |
| 226 3D | - | LOCK PLATE | |
| 227 3D | - | DRIVE ARM | |
| 228 3D | - | CAM HOLDER | |
| 229 3C | - | TRIGGER LEVER | |
| 230 1D | - | BRAKE ARM | |
| 231 3D | - | RETAINER | |
| 232 1C | - | SPECIAL WASHER | |
| 233 2D | - | INTERMEDIATE PULLEY DISK | |
| 234 2D | - | INTERMEDIATE PULLEY | |
| 235 2D | - | SHAFT | |
| 236 3C | - | REAR CHASSIS | |
| 237 2C | - | SPRING PIN | |
| 238 2C | - | STOP LEVER HOLDER | |
| 239 2C | - | STOP LEVER | |
| 240 2C | - | STOP LEVER COLLAR | |
| 241 3C | - | TIMER LEVER | |
| 242 3C | - | MAIN SW MOUNTING METAL | |
| 243 1D | - | REC SENSOR | |
| 244 1D | - | REC SENSOR ARM | |
| 245 1D | - | REC SENSOR ARM COLLAR | |
| 246 1C | - | TRIGGER OPERATION METAL | |
| 247 1D | B09-0220-08 | REEL CAP | * |
| 248 3D | D01-0308-08 | FLYWHEEL | * |
| 249 1D | D03-0015-08 | REEL DISK ASSY | * |
| 250 3D | D13-0214-08 | DRIVE GEAR ASSY | * |
| 251 3D | D13-0215-08 | CAPSTAN GEAR ASSY | * |
| 252 2D | D14-0228-08 | RF-ASSY | * |
| 253 2D | D14-0229-08 | PINCH ROLLER SUB ASSY | * |
| 254 3C | D15-0526-08 | PULLEY | * |
| 255 3D | D16-0231-08 | FLAT BELT | * |
| 256 3D | D16-0232-08 | SQUARE BELT | * |
| 257 2D | D19-0234-08 | CLUTCH ASSY | * |
| 258 2C,2D | D90-0102-08 | STEEL BALL | |
| 259 2C,2D | D90-0104-08 | STEEL BALL | * |
| 260 1C | E23-0305-08 | CORD LUG | |
| F1 ,2 | F05-1023-05 | FUSE (1A) | MS |
| F1 ,2 | F05-1023-05 | FUSE (1A) | UX |
| F1 ,2 | F05-1023-05 | FUSE (1A) | M2 |
| F1 ,2 | F06-1021-05 | FUSE (1A) | |
| 261 1D | G01-0682-08 | REC/PLAY HEAD SPRING | |
| 262 1D | G01-0792-08 | HEAD PANEL SPRING | * |
| 263 2C | G01-0793-08 | CASSETTE HOLDER SPRING | * |
| 264 2D | G01-0794-08 | CASSETTE HOLDER SPRING | * |
| 265 1D | G01-0795-08 | LEVER SPRING | * |
| 266 2D | G01-0796-08 | PINCH ROLLER SPRING | * |
| 267 1C | G01-0797-08 | TRIGGER OPERATION SPRING | * |
| 268 1C | G01-0798-08 | LEVER SPRING | * |
| 269 3D | G01-0799-08 | RF ARM SPRING | * |
| 270 2C | G01-0800-08 | RF LEVER SPRING | * |
| 271 3D | G01-1001-08 | SW ARM SPRING | * |
| 272 2C | G01-1002-08 | REC ARM SPRING | * |
| 273 2D | G01-1003-08 | REW ARM SPRING | * |
| 274 2C | G01-1004-08 | PLAY ARM SPRING | * |
| 275 2D | G01-1005-08 | FF ARM SPRING | * |
| 276 3D | G01-1006-08 | PAUSE ARM SPRING | * |
| 277 3D | G01-1008-08 | PAUSE CAM SPRING | * |
| 278 2D | G01-1009-08 | OPERATION LEVER SPRING | * |
| 279 3D | G01-1010-08 | LOCK PLATE SPRING | * |
| 280 3D | G01-1011-08 | DRIVE ARM SPRING | * |
| 281 3D | G01-1012-08 | BRAKE ARM SPRING | * |
| 282 1D | G01-1013-08 | REW REEL SPRING | * |
| 283 2D | G01-1014-08 | CLUTCH ARM SPRING | * |
| 284 2C | G01-1015-08 | SOLENOID SPRING | * |
| 285 3C | G01-1033-08 | SOLENOID SPRING | * |
| 286 1D | G02-0335-08 | CASSETTE HOLDER SPRING | * |
| 287 2C,2D | G10-0407-08 | FELT | * |
| 288 2C | G13-0446-08 | RUBBER CUSHION | |
| 289 2C,2D | J19-1977-08 | CASSETTE HOLDER | * |
| 290 3C | J21-2395-08 | PAUSE SW METAL | * |
| 291 2C | J31-0429-08 | COLLAR | |
| 292 2C,2D | J90-0311-08 | CASSETTE GUIDE | * |
| 293 2C,3C | N09-0202-08 | PAN HEAD SCREW | |
| 294 2C | N09-0203-08 | PAN HEAD SCREW | |
| 295 2D,3D | N09-0246-08 | PAN HEAD SCREW | |
| 296 1D | N09-0591-08 | PAN HEAD SCREW | |
| 297 2D | N09-0827-08 | TAP TIGHT SCREW | |
| 298 1D,3C | N09-0828-08 | TAP TIGHT SCREW | |
| 299 1D | N09-0830-08 | BINDING SCREW | |
| 300 1C | N09-0896-04 | TAP TIGHT SCREW | * |
| 301 2C,2D | N09-0898-08 | TAP TIGHT SCREW | * |
| 302 3C | N09-0899-08 | ADJUSTING SCREW | * |
| 303 1D | N09-0901-08 | TAP TIGHT SCREW | * |
| 304 1D,3C | N15-1030-46 | FLAT WASHER | |
| 305 2D | N19-0539-08 | SPRING WASHER | |
| 306 2C | N19-0551-08 | FLAT WASHER | * |
| 307 3D | N19-0573-08 | SPRING WASHER | * |
| 308 3C | S46-1316-08 | LEAF SWITCH | * |
| 309 3C | S46-1317-08 | LEAF SWITCH | * |
| 310 2D | S46-1318-08 | LEAF SWITCH | * |
| 311 1D | S46-1319-08 | LEAF SWITCH | * |
| 312 2C | T94-0063-08 | SOLENOID | * |
| 313 3C | T94-0064-08 | SOLENOID | * |

# INSTRUCTION FOR PARTS LIST

| Ref. No. 参照番号 | Parts No. 部品番号 | Description 部品名／規格 | Re-marks 備考 |
|---|---|---|---|
| 14 3A | A20-1391-13 | FRONT PANEL ASSY | *K |
| 14 3A | A20-1417-13 | FRONT PANEL ASSY | *T |
| 15 3A | A21-0302-03 | DRESSING PANEL | *K |
| 15 3A | A21-0302-03 | DRESSING PANEL | PU |
| 15 3A | A21-0302-03 | DRESSING PANEL | MX |
| C1 ,C2 | C54-3310-39 | CERAMIC 0.01UF P | ET |
| C1 | C90-0145-05 | POLYESTER 0.01UF AC125V | I |
| C1 | C91-0023-05 | CERAMIC 0.01UF AC250V | UM |
| C1 | C91-0023-05 | CERAMIC 0.01UF AC250V | HX |
| C1 | C91-0025-05 | CERAMIC 0.01UF AC125V | P |

① Exploded view drawing No.
② Position in exploded view.
③ Symbol of new parts
④ Area to which parts are shipped. Example: A20-1390-13 is the part No. of FRONT PANEL ASS'Y for the "K" type products (for U.S.A.). When this column is blank, it means that the same type of parts (same parts No.) are used for the products shipped to all areas.
⑤ Reference No. in schematic diagram.
⑥ Abbreviation of "ceramic capacitor".
All capacitors and resistors are listed using abbreviations.
Abbreviations

* Abbreviations of capacitors (Parts No. with initial letter "C").

| | |
|---|---|
| ELECTRO | Electrolytic capacitor |
| LL-ELEC | Low leak electrolytic capacitor |
| NP-ELEC | Non-pole electrolytic capacitor |
| MICA | Mica capacitor |
| POLYSTY | Polystyrene capacitor |
| MYLAR | Mylar capacitor |
| CERAMIC | Ceramic capacitor |
| TANTAL | Tantalum capacitor |
| MF | Metallized film capacitor |
| MP | Metallized paper capacitor |
| OIL | Oil capacitor |

The unit "UF" is used in lieu of "μF"

* Abbreviations of resistors (Parts No. with initial letters "R").

| | |
|---|---|
| RC | Carbon composition resistor |
| RD | Carbon film resistor |
| FL-PROOF RD | Flame-proof carbon film resistor |
| RW | Wire wound power resistor |
| FL-PROOF RS | Flame-proof metal oxide film resistor |
| RN | Metal film resistor |
| FUSE-RESIST | Resistor with fuse function |
| 2B | Rated wattage 1/8W |
| 2E | Rated wattage 1/4W |
| 2H | Rated wattage 1/2W |
| 3A | Rated wattage 1W |
| 3D | Rated wattage 2W |
| 3F | Rated wattage 3W |
| 3G | Rated wattage 4W |
| 3H | Rated wattage 5W |

All resistor values are indicated with the unit (Ω) omitted.

* Abbreviations common to capacitors and resistors.

| | |
|---|---|
| C | ±0.25pF (Used for capacitors only) |
| D | ±0.5pF (Used for capacitors only) |
| F | ±1% |
| G | ±2% |
| J | ±5% |
| K | ±10% |
| M | ±20% |
| Z | +80%, −20% (Used for capacitors only) |
| P | +100%, −0% (Used for capacitors only) |

* Resistors RD (carbon composition resistors) are not listed in the parts list. For values, refer to the schematic diagram.
* CODEs in X28-1320-xx.

| | |
|---|---|
| K: | X28-1320-01 |
| MSUXM2: | X28-1320-02 |
| TWH: | X28-1320-03 |
| P: | X28-1320-04 |